



STIC Search Report

EIC 3700

STIC Database Tracking Number: 131021

TO: Chanda Harris
Location: CP2 10E02 OR 10D10
Art Unit: 3714

Case Serial Number: 10/686198

From: Jeanne Horrigan
Location: EIC 3700
CP2-2C08
Phone: 305-5934

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Search Notes

Attached are the search results for the automated collaborative filtering system, including prior art searches in foreign and international patent databases; electronics, psychology, computers, and general sci/tech non-patent literature databases; and the Web via the Google and Scirus search engines.

I tagged the results that seemed to me to be most relevant, but I recommend that you review all of the results.

Also attached is a search feedback form. Completion of the form is voluntary. Your completing this form would help us improve our search services.

I hope the attached information is useful. Please feel free to contact me (phone 305-5934 or email jeanne.horrigan@uspto.gov) if you have any questions or need additional searching on this application.



STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact **the EIC searcher or contact:**

John Sims, EIC 3700 Team Leader
308-4836, CP2-2C08

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 3730

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 CP2 2C08



SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Chanda L. Harris Examiner #: 77264 Date: 8/27/04
Art Unit: 3714 Phone Number 308-8358 Serial Number: 10/686,198
Mail Box and Bldg/Room Location: CP210E02/CP210D10 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Methods and Apparatus for Predicting and Selectively Collecting Preferences Based on Personality Diagnosis
Inventors (please provide full names):

Eric J. Horvitz, David M. Pennock

Earliest Priority Filing Date: 7/31/00

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

child of US 6,455,963 (09/629,217)

Claims 25, 48, 58

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>Jane H. Hagan</u>	AA Sequence (#) _____	STN _____	
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____	
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____	
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____	
Date Completed: _____	Litigation _____	Lexis/Nexis _____	
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____	
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____	
Online Time: _____	Other _____	Other (specify) _____	

Collaborative Filtering by Personality Diagnosis: A Hybrid Memory- and Model-Based Approach

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[Access postscript or pdf file.](#)

Abstract:

The growth of Internet commerce has stimulated the use of collaborative filtering (CF) algorithms as recommender systems. Such systems leverage knowledge about the known preferences of multiple users to recommend items of interest to other users. CF methods have been harnessed to make recommendations about such items as web pages, movies, books, and toys. Researchers have proposed many approaches for generating recommendations. We describe and evaluate a new method called personality diagnosis (PD). Given a user's preferences for some items, we compute the probability that he or she is of the same "personality type" as other users, and, in turn, the probability that he or she will like new items. PD retains some of the advantages of traditional similarity-weighting CF approaches in that all data is brought to bear on each prediction and new data can be added easily and incrementally. Additionally, PD has a meaningful probabilistic interpretation, which may be leveraged to justify, explain, and augment results. We show empirically that PD provides better predictions than all four of the algorithms tested by Breese et al. [1998] on the EachMovie database of movie ratings. The probabilistic framework naturally supports a variety of descriptive measurements---in particular, we briefly consider the applicability of a value of information (VOI) computation.

Keywords: Recommender systems, collaborative filtering, agents, diagnosis of preferences, probability, decision theory.

In: *IJCAI Workshop on Machine Learning for Information Filtering*, International Joint Conference on Artificial Intelligence (IJCAI-99), August 1999, Stockholm, Sweden.

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Analysis of the Axiomatic Foundations of Collaborative Filtering

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Abstract:

The growth of Internet commerce has stimulated the use of collaborative filtering (CF) algorithms as recommender systems. Such systems leverage knowledge about the behavior of multiple users to recommend items of interest to individual users. CF methods have been harnessed to make recommendations about such items as web pages, movies, books, and toys. Researchers have proposed several variations of the technology. We take the perspective of CF as a methodology for combining preferences. The preferences predicted for the end user is some function of all of the known preferences for everyone in a database. Social Choice theorists, concerned with the properties of voting methods, have been investigating preference aggregation for decades. At the heart of this body of work is Arrow's result demonstrating the impossibility of combining preferences in a way that satisfies several desirable and innocuous-looking properties. We show that researchers working on CF algorithms often make similar assumptions. We elucidate these assumptions and extend results from Social Choice theory to CF methods. We show that only very restrictive CF functions are consistent with desirable aggregation properties. Finally, we discuss practical implications of these results.

Keywords: Recommender systems, collaborative filtering, agents, Arrow's impossibility theorem, preferences, probability, decision theory.

In: *AAAI Workshop on Artificial Intelligence for Electronic Commerce*, National Conference on Artificial Intelligence (AAAI-99), July 1999, Orlando, Florida.

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Eric Horvitz: Online papers and abstracts

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David M. Pennock's Publications

Tutorial *Markets in uncertainty: Risk, gambling, and information aggregation*
slides: (3.2M, PPT ZIP)

presented by David M. Pennock and Michael P. Wellman
at the ACM Conference on Electronic Commerce, San Diego, June 9-12, 2003.

Recent 1. Winners don't take all: Characterizing the competition for links on the
Studies: web
2. The real power of artificial markets

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Education

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Intelligent Systems concentration, with Graduate Certificate in Complex Systems

Dissertation: "Aggregating Probabilistic Beliefs: Market Mechanisms and Graphical Representations"

M.S. Computer Science DUKE UNIVERSITY, DURHAM, NC, AUG 1994

Masters thesis: "Learning in a Neural Network with Fractal Topology for Image Compression"

B.S. Physics DUKE UNIVERSITY, DURHAM, NC, MAY 1993

Second Major: Computer Science

Research Interests

- Analysis of new electronic and Web markets
 - Design of new markets according to both computational and economic objectives
 - Development of software tools and agents to facilitate and automate trade and negotiation
- Topics:** electronic commerce, artificial intelligence, recommender systems, Internet analysis, information retrieval, decision theory, uncertain reasoning, decentralized coordination

Honors

- Fellowship, Michigan Decision Behavior Consortium, January 1998
- Best Student Paper Finalist, Decision Analysis Society of the Institute for Operations Research and the Management Sciences, 1998
- Graduated magna cum laude, 1993
- Dean's List, 1989-1993
- Golden Key National Honors Society, 1991
- Phi Eta Sigma Freshman Honors Society, 1990

Activities

- Santa Fe Institute Complex Systems Summer School, June 1996
- Duke in Cambridge Program in England, Summer 1992
- Pi Kappa Alpha Fraternity, 1990-1993; Community Service Chair, 1991-1992

Highlights

- Currently a Research Scientist at Overture Services, Inc.
- Adjunct Assistant Professor at Pennsylvania State University
- 33 journal and conference publications (including *PNAS*, *Science*, *IEEE Computer*, *AAAI*, *EC*, *WWW*, *KDD*, *UAI*, *SIGIR*, *ICML*, *NIPS*, *SAINT*, *INFOCOM*, and *ACM SIGCSE*)
- 1 patent; over 20 presentations
- Press interviews include New York Times, Washington Post, Dow Jones/Wall Street Journal, Investors Business Daily, LA Business Journal, Discover Magazine, and others
- Press reports covering my research have appeared in Discover Magazine, New Scientist, CNN/Money, New York Times, E! Online, Beyond 2000, Tech TV, and other media in the US and abroad

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- Sports Betting Markets: Characteristics and Information Aggregation.** *International Conference on Gambling and Risk Taking*, Vancouver, Canada, May 2003
- Information and forecast accuracy in markets and market games.**
Google, Inc., Mountain View, CA, September 2002
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- Modeling information incorporation in markets and market games.** *Markets and Decisions Workshop*, Arlington, VA, June 2002
- Semantic explanations of market forecasts.** *Controlled Market Economies Symposium*, Cambridge, MA, May 2002
- The power of play: Efficiency, information aggregation, and forecast accuracy in market games.** *Institute for Operations Research and the Management Sciences National Meeting*, Miami, FL, November 2001
- Maximizing information, optimizing risk, and leveraging forecasts in securities markets.** *NEC Research Symposium*, Bonn, Germany, May 2001
- Recommender systems.** *Penn State eBusiness Research Center Academic Workshop on Personalization Issues in e-Business*, Arlington, VA, April 2001
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- E-markets and uncertainty, or What Bayesians can learn by watching market prices.** *Microsoft Research*, Redmond, WA, June 2000
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NEC Research Institute, Princeton, NJ, February 2000
Microsoft Research, Redmond, WA, August, 1998
- Efficient representations for aggregate belief and compact securities markets.** *Institute for Operations Research and the Management Sciences National Meeting*, Philadelphia, PA, November 1999
- Representing and forming aggregate probabilities: From graphical models to market mechanisms.**
NASA Ames, Moffett Field, CA, June 1999
Washington University, St. Louis, MO, May 1999
AT&T Labs Research, Florham Park, NJ, May 1999
- Combining probabilistic models: Impossibility, possibility, and decentralized mechanisms.** *IBM Research*, Yorktown Heights, NY, March 1999

Toward an efficient, decentralized mechanism for aggregating belief. *Stanford University*, Palo Alto, CA, February 1999

A market framework for pooling opinions.

RAND Corporation, Santa Monica, CA, July 1998

Institute for Operations Research and the Management Sciences National Meeting, Montréal, Canada, April 1998

Patents

Methods and apparatus for predicting attribute values based on a personality diagnosis, pending, with E. Horvitz, *Microsoft Corporation*

Professional Experience

Senior Research Scientist OVERTURE SERVICES, INC., NOV 2002 TO PRESENT

Conducting research on information markets, auctions, electronic commerce, and artificial intelligence. Developing creative and innovative technologies that help position Overture as a leader in Internet e-commerce and related scientific endeavors

Research Scientist

NEC RESEARCH INSTITUTE, PRINCETON, NJ, OCT 1999 TO OCT 2002

Conducted research on information markets, Web games, recommender systems, Web hyperlinks, social networks, consensus Bayesian networks, and ensemble learning algorithms

Adjunct Assistant Professor of Computer Science and Engineering

PENNSYLVANIA STATE UNIV., STATE COLLEGE, PA, JUN 2001 TO PRESENT

Taught CSE 597B, Computational aspects of ecommerce

Research Intern MICROSOFT RESEARCH, REDMOND, WA, JUN 1998 TO AUG 1998

Conducted research on impossibility theorems in group coordination, recommender systems, and Bayesian networks

Research Assistant

UNIVERSITY OF MICHIGAN, ANN ARBOR, MI, SEP 1995 TO MAY 1999

Conducted research on computationally efficient and decentralized mechanisms for aggregating information using markets

Teaching Assistant

UNIVERSITY OF MICHIGAN, ANN ARBOR, MI, SEP 1994 TO DEC 1994

Taught CS 380: Data Structures and Algorithms

Research Assistant DUKE UNIVERSITY, DURHAM, NC, SEP 1993 TO AUG 1994

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200455
File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)
File 348:EUROPEAN PATENTS 1978-2004/Aug W03
File 349:PCT FULLTEXT 1979-2002/UB=20040826,UT=20040819
Set Items Description
S1 94 AU='HORVITZ E' OR AU='HORVITZ E J' OR AU='HORVITZ ERIC' OR
AU='HORVITZ ERIC J'
S2 4 AU='PENNOCK D M' OR AU='PENNOCK DAVID'
S3 2 S1 AND S2
S4 84091 PERSONALITY OR COLLABORATIVE() FILTER? OR RECOMMEND?
S5 354 COLLABORATIVE() (FILTERING OR FILTERS)
S6 3 (S1:S2 AND S4:S5) NOT S3

3/34/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016182105 **Image available**

WPI Acc No: 2004-339992/200431

Attribute value e.g. persons preferences predicting method, involves
generating probability that active entitys true personality type is that
of current other entity using personality type generation process

Patent Assignee: HORVITZ E J (HORV-I); PENNOCK D M (PENN-I)

Inventor: HORVITZ E J ; PENNOCK D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040076936	A1	20040422	US 2000629217	A	20000731	200431 B
			US 2003686198	A	20031015	

Priority Applications (No Type Date): US 2000629217 A 20000731; US
2003686198 A 20031015

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040076936	A1	20	G09B-019/00		Cont of application US 2000629217 Cont of patent US 6655963

Abstract (Basic): US 20040076936 A1

NOVELTY - The method involves generating a probability that the active entitys true personality type is that of the current other entity using a personality type generation process (134). A probability that the active entity values the attribute with the current possible values is produced based on the above probability. A possible value having maximum probability is selected based on the probability.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a machine readable medium having instructions to perform the method

(b) an apparatus for predicting the value of an attribute of an active entity.

USE - Used for predicting a value of an attribute (claimed) e.g. a persons preferences that is indicated by the ratings of the items e.g. a book, a movie, a household appliance, a consumer good, a business good, a clothing, and a financial instrument to recommend the items.

ADVANTAGE - The determination of the two probabilities favorably orders query for the attribute values, thereby avoiding the frustration of the user while recommending the items.

DESCRIPTION OF DRAWING(S) - The drawing shows a high level bubble diagram of persons preferences predicting method.

User interface (114)
Network (120)
Personality type generation process (134)
Attribute value probability storage (139)
Database pruning/management process (144)
pp; 20 DwgNo 1/9

Derwent Class: P85; T01; W05

International Patent Class (Main): G09B-019/00

3/34/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015882778 **Image available**

WPI Acc No: 2004-040611/200404

Attribute value e.g. persons preference predicting method, involves determining probability that person values attribute having no assigned value with current value based on probability that each person has same personality type

Patent Assignee: MICROSOFT CORP (MICT)

Inventor: HORVITZ E J ; PENNOCK D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6655963	B1	20031202	US 2000629217	A	20000731	200404 B

Priority Applications (No Type Date): US 2000629217 A 20000731

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6655963	B1	18	G09B-019/00	

Abstract (Basic): US 6655963 B1

NOVELTY - The method involves generating a probability that a persons true personality type is same as that of every other persons. A probability that the person values an attribute with current possible value based on previous probability is determined for possible attribute value with no assigned value. A possible value with the maximum probability determined in previous step is selected to generate a predicted value.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a machine-readable medium
- (2) an apparatus for predicting the value of an attribute of an active entity.

USE - Used for predicting an attribute value e.g. item ratings or persons preference to recommend an item e.g. a book, movie, household appliance, consumer good, business good, clothing, and financial instrument.

ADVANTAGE - The method minimizes the number of explicit ratings of users while maximizing the accuracy of the determined personality probabilities. The method allows the attributes whose values add little benefit to the accuracy of the recommendation to be removed from database, thereby mitigating storage requirements and processing time.

DESCRIPTION OF DRAWING(S) - The drawing shows a bubble diagram of processes that perform attribute values prediction.

Front end device (110)
User interface (114)
Network (120)
Back end device (130)

pp; 18 DwgNo 1/9
Derwent Class: P85; T01
International Patent Class (Main): G09B-019/00

6/34/1 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
011659821 **Image available**
WPI Acc No: 1998-076729/199807
Collaborative filtering system using belief network or Bayesian network -
using belief network contg user attribute and user preference nodes, and
determining preference having greatest likelihood of desired preference by
evaluating probabilities of preference nodes given values of attribute nodes
Patent Assignee: MICROSOFT CORP (MICR-N)
Inventor: BREESE J S; CHICKERING D M; HECKERMAN D E; HORVITZ E
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No Kind Date Applicat No Kind Date Week
US 5704017 A 19971230 US 96602238 A 19960216 199807 B
Priority Applications (No Type Date): US 96602238 A 19960216
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 5704017 A 29 G06F-017/00
Abstract (Basic): US 5704017 A

The belief system learns a belief network using both prior knowledge obtained from an expert in a given field of decision making and a database containing empirical data obtained from many people. The empirical data contains attributes of users as well as their preferences in the field of decision making. After initially learning the belief network, the belief network is relearned at various intervals when additional attributes are identified as having a causal effect on the preferences and data for these additional attributes can be gathered.

This relearning allows the belief network to improve its accuracy at predicting preferences of a user. Upon each iteration of relearning, a cluster model is automatically generated that best predicts the data in the database. After relearning the belief network a number of times, the belief network is used to predict the preferences of a user using probabilistic inference. In performing probabilistic inference, the known attributes of a user are received and the belief network is accessed to determine the probability of the unknown preferences of the user given the known attributes. Based on these probabilities, the preference most likely to be desired by the user can be predicted.

ADVANTAGE - Prior knowledge from expert in given field of decision making is used to seed clustering, producing clusters which accurately reflect data in database. Number of clusters is determined automatically, which is more reliable than manually predicting and inputting number of clusters. No distance metric is needed to reduce amount of data gathered before system can run. Non-numerical attributes are used to eliminate errors introduced into the system through transposition of non-numerical values into numerical values. Output of system is clustering model that is easily modifiable by administrator so that it can be fed back into system and improved iteratively, leading to improved accuracy in determining preferences of user.

Dwg.3/13
Derwent Class: T01

International Patent Class (Main): G06F-017/00

6/3,AB/2 (Item 1 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00939317

**SCHEMAS FOR A NOTIFICATION PLATFORM AND RELATED INFORMATION SERVICES
SCHEMAS POUR UNE PLATE-FORME DE NOTIFICATION ET SERVICES D'INFORMATIONS
ASSOCIEES**

Patent Applicant/Assignee:

MICROSOFT CORPORATION, One Microsoft Way, Redmond, WA 98052, US, US
(Residence), US (Nationality)

Inventor(s):

HORVITZ Eric J , 330 Waverly Way, Kirkland, WA 98033, US,
STECKLER Paul A, 2115 187th Ave NE, Redmond, WA 98052, US,
PIERCE Shaun D, 24515 NE 11th Place, Sammamish, WA 98074, US,
FANG Lijiang, 23618 NE 25th Way, Sammamish, WA 98074, US,
LUCOVSKY Mark H, 811 Windsor Drive SE, Sammamish, WA 98074, US,
WU Winnie C, 13605 SE 58th Place, Bellevue, WA 98006, US

Legal Representative:

MICHALIK Albert S (agent), Suite 193, 704-228th Avenue NE, Sammamish, WA
98074, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200273454 A2-A3 20020919 (WO 0273454)

Application: WO 2002US8061 20020314 (PCT/WO US0208061)

Priority Application: US 2001275809 20010314; US 200117680 20011022

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 28811

English Abstract

1 A schema-based notification platform (500) that provides regularized notification handling (506) including user control and normalization of the operation of policies across different information types and contexts. Information-service schemas and services (503) are combined to build a content-sensitive and context-sensitive information service to communicate information to recipient devices (508) of users that subscribe to those services. An information agent service (504) collects the information, and based on various criteria, determines if, when, and how to send and render the information, and to which subscribing client device or devices.

6/3,AB/3 (Item 2 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00762454

DECISION-ANALYTIC APPROACH TO HUMAN-COMPUTER INTERACTIONS
APPROCHE D'ANALYSE DE DECISION DES INTERACTIONS ORDINATEUR-UTILISATEUR

Patent Applicant/Assignee:

MICROSOFT CORPORATION, One Microsoft Way, Redmond, WA 98052, US, US
(Residence), US (Nationality)

Inventor(s):

HORVITZ Eric, 330 Waverly Way, Kirkland, WA 98033, US

PAEK Timothy, One Microsoft Way, Redmond, WA 98052, US

Legal Representative:

DRYJA Michael A, Law Offices of Michael Dryja, 704 228th Avenue NE, PMB
694, Redmond, WA 98053, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200075864 A1 20001214 (WO 0075864)

Application: WO 2000US15272 20000602 (PCT/WO US0015272)

Priority Application: US 99326043 19990604

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE
GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU
ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8767

English Abstract

A multi-level decision-analytic approach to failure and repair within computer-user communications is disclosed. In one embodiment, a computerized system for repairing communication failure within a computer-user interaction context includes a maintenance module, an intention module, and a conversation control subsystem. The maintenance module manages uncertainty regarding signal identification and channel fidelity. The intention module is supported by the maintenance module, and manages uncertainty about the recognition of user's goals from signals. The conversation control subsystem surrounds both the modules, and manages the joint activity between the computer and the user, and one or more high-level events regarding the joint activity.

File 7:Social SciSearch(R) 1972-2004/Aug W4
File 11:PsycINFO(R) 1887-2004/May W5
File 34:SciSearch(R) Cited Ref Sci 1990-2004/Aug W4
File 35:Dissertation Abs Online 1861-2004/Jul
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
File 142:Social Sciences Abstracts 1983-2004/Jul

Set	Items	Description
S1	23	AU='HORVITZ E' OR AU='HORVITZ EJ'
S2	1	AU='HORVITZ, ERIC JOEL'
S3	16	AU='PENNOCK D' OR AU='PENNOCK DM'
S4	1	AU='PENNOCK, DAVID M.'
S5	0	S1:S2 AND S3:S4
S6	41	S1:S4
S7	40	RD (unique items)
S8	335906	PERSONALITY OR RECOMMEND OR COLLABORATIVE() FILTER???
S9	0	S7 AND S8
S10	40	Sort S7/ALL/PY,A

10/6/7 (Item 7 from file: 34)
01355876 Genuine Article#: GR814 Number of References: 97
Title: DECISION-ANALYSIS AND EXPERT SYSTEMS (Abstract Available)

10/6/10 (Item 10 from file: 35)
01160453 ORDER NO: AAD91-15787
COMPUTATION AND ACTION UNDER BOUNDED RESOURCES
Year: 1991

10/6/11 (Item 11 from file: 34)
00883873 Genuine Article#: FC762 Number of References: 0
Title: INTELLEYE, AN EXPERT SYSTEM FOR DIAGNOSING OPHTHALMOLOGIC DISEASES
FROM IMAGES OF THE OCULAR FUNDUS

10/6/12 (Item 12 from file: 34)
01795793 Genuine Article#: JB366 Number of References: 92
Title: TOWARD NORMATIVE EXPERT SYSTEMS .1. THE PATHFINDER PROJECT (Abstract Available)

10/6/19 (Item 19 from file: 7)
02769122 Genuine Article#: RF227 Number of References: 45
Title: UNCERTAIN REASONING AND FORECASTING (Abstract Available)
1995

10/6/20 (Item 20 from file: 34)
05677210 Genuine Article#: WP604 Number of References: 0
Title: Flexible computation: Results, issues, and opportunities
Publication date: 19970300

10/6/21 (Item 21 from file: 34)
08061992 Genuine Article#: 242MH Number of References: 15
Title: Uncertainty, action, and interaction: in pursuit of mixed-initiative
computing
Publication date: 19990900

10/6/24 (Item 24 from file: 34)
10046546 Genuine Article#: BS90A Number of References: 0
Title: Uncertainty, utility, and understanding

Publication date: 20000000

10/6/26 (Item 26 from file: 34)
10568590 Genuine Article#: BU09W Number of References: 11
Title: **Harnessing models of users' goals to mediate clarification dialog in spoken language systems** (ABSTRACT AVAILABLE)
Publication date: 20010000

10/6/29 (Item 29 from file: 34)
09431933 Genuine Article#: 406AR Number of References: 69
Title: **Principles and applications of continual computation** (ABSTRACT AVAILABLE)
Publication date: 20010200

10/6/30 (Item 30 from file: 34)
09431927 Genuine Article#: 406AR Number of References: 0
Title: **Computational tradeoffs under bounded resources**
Publication date: 20010200

10/6/32 (Item 32 from file: 34)
09379626 Genuine Article#: 398QG Number of References: 5
Title: **Persistence of Web references in scientific research** (ABSTRACT AVAILABLE)
Publication date: 20010200

10/6/35 (Item 35 from file: 34)
10586448 Genuine Article#: 543DX Number of References: 25
Title: **Winners don't take all: Characterizing the competition for links on the web** (ABSTRACT AVAILABLE)
Publication date: 20020416

10/6/36 (Item 36 from file: 34)
12361826 Genuine Article#: BY06X Number of References: 4
Title: **RightSPOT: A novel sense of location for a Smart Personal Object** (ABSTRACT AVAILABLE)
Publication date: 20030000

10/6/39 (Item 39 from file: 34)
11640357 Genuine Article#: 677YG Number of References: 12
Title: **Models of attention in computing and communication: From principles to applications**
Publication date: 20030300

10/6/40 (Item 40 from file: 7)
04082911 Genuine Article#: 841TK Number of References: 16
Title: **Actions, answers, and uncertainty: a decision-making perspective on Web-based question answering** (ABSTRACT AVAILABLE)
2004

10/7/8 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
01355575 Genuine Article#: GR511 Number of References: 18
Title: **PROBABILISTIC DIAGNOSIS USING A REFORMULATION OF THE INTERNIST-1/QMR KNOWLEDGE BASE .2. EVALUATION OF DIAGNOSTIC PERFORMANCE**
Author(s): MIDDLETON B; SHWE MA; HECKERMAN DE; HENRION M; HORVITZ EJ ;

LEHMANN HP; COOPER GF
Corporate Source: STANFORD UNIV,MED INFORMAT SECT,MED SCH OFF
BLDG,X215/STANFORD//CA/94305; UNIV PITTSBURGH,MED INFORMAT
SECT/PITTSBURGH//PA/15260
Journal: METHODS OF INFORMATION IN MEDICINE, 1991, V30, N4, P256-267
Language: ENGLISH Document Type: ARTICLE
Abstract: We have developed a probabilistic reformulation of the Quick
Medical Reference (QMR) system. In Part I of this two-part series, we
described a two-level, multiply connected belief-network representation
of the QMR knowledge base and a simulation algorithm to perform
probabilistic inference on the reformulated knowledge base. In Part II
of this series, we report on an evaluation of the probabilistic QMR, in
which we compare the performance of QMR to that of our probabilistic
system on cases abstracted from continuing medical education materials
from Scientific American Medicine. In addition, we analyze empirically
several components of the probabilistic model and simulation algorithm.

10/7/9 (Item 9 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
01355574 Genuine Article#: GR511 Number of References: 42
**Title: PROBABILISTIC DIAGNOSIS USING A REFORMULATION OF THE INTERNIST-1/QMR
KNOWLEDGE BASE .1. THE PROBABILISTIC MODEL AND INFERENCE ALGORITHMS**
Author(s): SHWE MA; MIDDLETON B; HECKERMAN DE; HENRION M; HORVITZ EJ ;
LEHMANN HP; COOPER GF
Corporate Source: STANFORD UNIV,MED INFORMAT SECT,MED SCH OFF
BLDG,X215/STANFORD//CA/94305; STANFORD UNIV,MED INFORMAT SECT,MED SCH
OFF BLDG,X215/STANFORD//CA/94305; UNIV PITTSBURGH,MED INFORMAT
SECT/PITTSBURGH//PA/15260
Journal: METHODS OF INFORMATION IN MEDICINE, 1991, V30, N4, P241-255
Language: ENGLISH Document Type: ARTICLE
Abstract: In Part I of this two-part series, we report the design of a
probabilistic reformulation of the Quick Medical Reference (QMR)
diagnostic decision-support tool. We describe a two-level multiply
connected belief-network representation of the QMR knowledge base of
internal medicine. In the belief-network representation of the QMR
knowledge base, we use probabilities derived from the QMR disease
profiles, from QMR imports of findings, and from National Center for
Health Statistics hospital-discharge statistics.
We use a stochastic simulation algorithm for inference on the
belief network. This algorithm computes estimates of the posterior
marginal probabilities of diseases given a set of findings. In Part 11
of the series, we compare the performance of QMR to that of our
probabilistic system on cases abstracted from continuing medical
education materials from Scientific American Medicine. In addition, we
analyze empirically several components of the probabilistic model and
simulation algorithm.

10/7/13 (Item 13 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
02575837 Genuine Article#: LN079 Number of References: 44
**Title: A BAYESIAN-ANALYSIS OF SIMULATION ALGORITHMS FOR INFERENCE IN BELIEF
NETWORKS**
Author(s): DAGUM P; HORVITZ E
Corporate Source: STANFORD UNIV,MED CTR,SCH MED,MED INFORMAT

SECT/STANFORD//CA/94305; ROCKWELL PALO ALTO LAB/PALO ALTO//CA/94301
Journal: NETWORKS, 1993, V23, N5 (AUG), P499-516
ISSN: 0028-3045

Language: ENGLISH Document Type: ARTICLE

Abstract: A belief network is a graphical representation of the underlying probabilistic relationships in a complex system. Belief networks have been employed as a representation of uncertain relationships in computer-based diagnostic systems. These diagnostic systems provide assistance by assigning likelihoods to alternative explanatory hypotheses in response to a set of findings or observations. Approximation algorithms have been used to compute likelihoods of hypotheses in large networks. We analyze the performance of leading Monte Carlo approximation algorithms for computing posterior probabilities in belief networks. The analysis differs from earlier attempts to characterize the behavior of simulation algorithms in our explicit use of Bayesian statistics: We update a probability distribution over target probabilities of interest with information from randomized trials. For real epsilon, $\delta < 1$ and for a probabilistic inference $\Pr[x|e]$, the output of an inference approximation algorithm in an (ϵ, δ) -estimate of $\Pr[x|e]$ if with probability at least $1 - \delta$ the output is within relative error epsilon of $\Pr[x|e]$. We construct a stopping rule for the number of simulations required by logic sampling, randomized approximation schemes, and likelihood weighting to provide (ϵ, δ) -estimates of $\Pr[x|e]$. With probability $1 - \delta$, the stopping rule is optimal in the sense that the algorithm performs the minimum number of required simulations. We prove that our stopping rules are insensitive to the prior probability distribution on $\Pr[x|e]$. (C) 1993 by John Wiley & Sons, Inc.

10/7/14 (Item 14 from file: 34)

DIALOG(R) File 34:SciSearch(R) Cited Ref Sci

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02314714 Genuine Article#: KT658 Number of References: 14

Title: AN APPROXIMATE NONMYOPIC COMPUTATION FOR VALUE OF INFORMATION

Author(s): HECKERMAN D; HORVITZ E; MIDDLETON B

Corporate Source: UNIV CALIF LOS ANGELES, DEPT COMP SCI/LOS

ANGELES//CA/90024; MICROSOFT RES CTR/REDMOND//WA/98052; ROCKWELL INT
CORP, CTR SCI, PALO ALTO LAB/PALO ALTO//CA/94301; STANFORD UNIV, MED
CTR, MED INFORMAT SECT/STANFORD//CA/94305

Journal: IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE,
1993, V15, N3 (MAR), P292-298

ISSN: 0162-8828

Language: ENGLISH Document Type: NOTE

Abstract: Value-of-information analyses provide a means for selecting the next best observation to make and for determining whether it is better to gather additional information or to act immediately. Determining the next best test to perform, given uncertainty about the state of the world, requires a consideration of the value of making all possible sequences of observations. In practice, decision analysts and expert-system designers have avoided the intractability of exact computation of the value of information by relying on a myopic assumption that only one additional test will be performed, even when there is an opportunity to make a large number of observations. We present an alternative to the myopic analysis. In particular, we present an approximate method for computing the value of information of

a set of tests, which exploits the statistical properties of large samples. The approximation is linear in the number of tests, in contrast with the exact computation, which is exponential in the number of tests. The approach is not as general as is a complete nonmyopic analysis, in which all possible sequences of observations are considered. In addition, the approximation is limited to specific classes of dependencies among evidence and to binary hypothesis and decision variables. Nonetheless, as we demonstrate with a simple application, the approach can offer an improvement over the myopic analysis.

10/7/15 (Item 15 from file: 34)

DIALOG(R) File 34:SciSearch(R) Cited Ref Sci

(c) 2004 Inst for Sci Info. All rts. reserv.

03571722 Genuine Article#: PN700 Number of References: 18

Title: DYNAMIC CONSTRUCTION AND REFINEMENT OF UTILITY-BASED CATEGORIZATION MODELS

Author(s): POH KL; FEHLING MR; HORVITZ EJ

Corporate Source: NATL UNIV SINGAPORE, DEPT IND & SYST ENGN, KENT.

RIDGE/SINGAPORE 0511//SINGAPORE//; STANFORD UNIV, DEPT ENGN ECON

SYST, INTELLIGENT SYST LAB/STANFORD//CA/94305; MICROSOFT RES, DECIS

THEORY GRP/REDMOND//WA/98052

Journal: IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS, 1994, V24, N11 (NOV), P1653-1663

ISSN: 0018-9472

Language: ENGLISH Document Type: ARTICLE

Abstract: The actions taken by an automated decision-making agent can be enhanced by including mechanisms that enable the agent to categorize concepts effectively. We pose a utility-based approach to categorization based on the idea that categorization should be carried out in the service of action. The choice of concepts made by a decision maker is critical in the effective selection of actions under resource constraints. This perspective is in contrast to classical and similarity-based approaches which seek completeness in concept description with respect to shared properties rather than the effectiveness of decision making. We propose a decision-theoretic framework for utility-based categorization which involves reasoning about alternative categorization models consisting of sets of interrelated concepts at varying levels of abstraction. Categorization models that are too abstract may overlook details that are critical for selecting the most appropriate actions. Categorization models that are too detailed, however, may be too expensive to process and may contain information that is irrelevant for selecting the best action. Categorization models are therefore evaluated on the basis of the expected value of their recommended action, taking into account the associated resource cost required for their evaluation. A knowledge representation scheme, known as probabilistic conceptual networks, has been developed to support the dynamic construction of models at varying levels of abstraction. This knowledge representation scheme combines the formalisms of influence diagrams from decision analysis and inheritance/abstraction hierarchies from artificial intelligence. We also propose an incremental approach to categorical reasoning which involves the dynamic construction and refinement of categorization models. A model may be improved by making the concepts under consideration either more abstract or more detailed. The expected increase in value of the recommended action may be used to direct and

control the direction of model improvements. By applying decision-theoretic control of model refinement, a resource-constrained actor iteratively decides between continuing to improve the current level of abstraction in the model, or to act immediately.

10/7/23 (Item 23 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
(c) 2004 ProQuest Info&Learning. All rts. reserv.
01734734 ORDER NO: AADAA-I9959840

Aggregating probabilistic beliefs: Market mechanisms and graphical representations

Author: Pennock, David M.
Degree: Ph.D.
Year: 1999
Corporate Source/Institution: The University of Michigan (0127)
Chair: Michael P. Wellman
Source: VOLUME 61/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 937. 129 PAGES

A long-standing question in statistics is how best to aggregate the probabilistic beliefs of multiple agents. Related is the practical question of how to represent the combined beliefs efficiently. This dissertation reports contributions on both fronts.

First, I formulate and analyze a securities market mechanism for aggregating beliefs. Equilibrium prices in the market are interpreted as consensus beliefs. Under homogeneity conditions regarding agents' utilities, the market mechanism corresponds with standard aggregation functions, and the market's outward behavior is indistinguishable from that of an individual. I also explore extensions to the model in which agents learn from prices and the market as a whole adapts over time. In certain circumstances, price fluctuations can be viewed as the Bayesian updates of a rational individual.

Second, I investigate the use of graphical models, and in particular Bayesian networks, for representing aggregate beliefs. I derive two impossibility theorems which contradict widely held intuitions about how Bayesian networks should be combined. The so-called logarithmic opinion pool is shown to admit relatively concise encodings. I describe the nature of graphical structures consistent with this pooling function, and give algorithms for computing the logarithmic and linear opinion pools with, in some cases, exponential speedups over standard methods.

Finally, I apply and extend the graphical modeling results to the market framework, deriving sufficient conditions for compact markets to be operationally complete. Such markets still induce a complete consensus distribution and support Pareto optimal allocations of risk, but with exponentially fewer securities than required for traditional completeness.

10/7/37 (Item 37 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
11885941 Genuine Article#: 705VL Number of References: 12
Title: The self-organized Web: The yin to the semantic Web's yang
Author(s): Flake GW; Pennock DM; Fain DC
Journal: IEEE INTELLIGENT SYSTEMS, 2003, V18, N4 (JUL-AUG), P75-77
ISSN: 1094-7167 Publication date: 20030700
Publisher: IEEE COMPUTER SOC, 10662 LOS VAQUEROS CIRCLE, PO BOX 3014, LOS ALAMITOS, CA 90720-1314 USA
Language: English Document Type: EDITORIAL MATERIAL

File 635:Business Dateline(R) 1985-2004/Aug 28
File 560:Spokane Spokesman-Review 1994-2004/May 27
File 707:The Seattle Times 1989-2004/Aug 29
File 736:Seattle Post-Int. 1990-2004/Aug 30
File 471:New York Times Fulltext 90-Day 2004/Aug 31
File 638:Newsday/New York Newsday 1987-2004/Aug 30
File 719:(Albany) The Times Union Mar 1986-2004/Aug 30
File 733:The Buffalo News 1990- 2004/Aug 29
File 743:(New Jersey)The Record 1989-2004/Aug 30
File 16:Gale Group PROMT(R) 1990-2004/Aug 31
File 160:Gale Group PROMT(R) 1972-1989
File 621:Gale Group New Prod. Annou.(R) 1985-2004/Aug 31
File 148:Gale Group Trade & Industry DB 1976-2004/Aug 31

Set	Items	Description
S1	47	ERIC(1W)HORVITZ
S2	14	(DAVE OR DAVID) (1W) PENNOCK
S3	0	S1 AND S2
S4	61	S1:S2
S5	39	RD (unique items)
S6	1	AU='PENNOCK, DAVID M.'
S7	3	AU='HORVITZ, ERIK'
S8	4	S6:S7
S9	4	RD (unique items)
S10	38	S5 NOT S8
S11	38	Sort S10/ALL/PD,A

9/7/1 (Item 1 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

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14520315 SUPPLIER NUMBER: 70741124 (THIS IS THE FULL TEXT)

The Real Power of Artificial Markets.(playmoney market probabilities)(Brief Article)(Statistical Data Included)

PENNOCK, DAVID M. ; LAWRENCE, STEVE; GILES, C. LEE; NIELSEN, FINN ARUP
Science, 291, 5506, 987

Feb 9, 2001

TEXT:

ASSESSING THE PROBABILITIES OF FUTURE events is a problem often faced by science policymakers. For example, CERN, the European laboratory for particle physics, recently had to judge whether the probability of discovering a Higgs boson was high enough to justify extending the operation of its collider (see Science, 22 Sept., p. 2014, and 29 Sept., p. 2260). At the Foresight Exchange (FX) Web site (<http://www.ideosphere.com/>), traders can actually bet on the outcomes of unresolved scientific questions, including whether physicists will discover the Higgs boson by 2005. The going price of the security (0.77 as of 24 January) can be seen as the market's assessment of the probability of the particle's discovery. FX is only a game, run with play money (FX dollars). Empirical studies (1), laboratory investigations (2), and policy proposals (3) suggest that prices of real-money securities do constitute accurate likelihoods, because traders have strong (monetary) incentives to leverage pertinent information. But can we place legitimate credence on the accuracy of FX prices, which are determined solely through competition in a play-money market game?

To an extent, yes. We find that FX prices strongly correlate with observed outcome frequencies. We collected historical price information for 161 expired securities, corresponding to questions that had been

definitively answered "yes" or "no," recorded prices 30 days before expiration, sorted securities by price, and grouped them into six price ranges. The figure is a plot of observed frequency (the actual number of "yes" securities divided by the total number) versus average price (in FX dollars) for each group. Error bars display 95% confidence intervals, under an assumption that outcomes are independent Bernoulli trials with a uniform prior. We find similar accuracy in another playmoney market called the Hollywood Stock Exchange (<http://www.hsx.com/>). Prices of securities in Oscar, Emmy, and Grammy awards correlate well with actual award outcome frequencies, and prices of movie stocks accurately predict real box office results.

DAVID M. PENNOCK, (1) (*) **STEVE LAWRENCE**, (1) **C. LEE GILES**, (2) **FINN ARUP NIELSEN** (3)

(1) NEC Research Institute, 4 Independence Way, Princeton, NJ 08540, USA. (2) School of Information Sciences and Technology and Department of Computer Science and Engineering, Pennsylvania State University, University Park, PA 16801, USA. (3) Informatics and Mathematical Modeling, Technical University of Denmark, DK-2800 Lyngby, Denmark.

(*) To whom correspondence should be addressed. E-mail: dpennock@research.nj.nec.com

References and Notes

(1.) R. Forsythe, T. A. Rietz, T. W. Ross, J. Econ. Behav. Organ. 39, 83 (1999).

(2.) C. R. Plott and S. Sunder, Econometrica 56 (no. 5), 1085 (1988).

(3.) R. D. Hanson, Soc. Epistemol. 9 (no. 1), 3 (1995).

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11/3,K/13 (Item 13 from file: 743)

DIALOG(R) File 743: (New Jersey) The Record

(c) 2004 No. Jersey Media G Inc. All rts. reserv.
10748010

A SMART NEW WORLD IS ON THE HORIZON ARTIFICIAL INTELLIGENCE FOR EVERYDAY USE

Record (Northern New Jersey) (RE) - MONDAY, September 4, 2000

By: JAMES JANEGA, Special from the Chicago Tribune

Edition: All Editions Section: BUSINESS Page: h06

Word Count: 1,258

...to say about it, we are likely to be talking to our computers soon, says

Eric Horvitz, a senior researcher at Microsoft.

A user might talk to the computer "to clarify understanding...

11/3,K/19 (Item 19 from file: 16)

DIALOG(R) File 16: Gale Group PROMT(R)

(c) 2004 The Gale Group. All rts. reserv.

08352848 Supplier Number: 70732666 (USE FORMAT 7 FOR FULLTEXT)

The Power of Play: Game Markets Offer Serious Predictions.

Business Wire, p2107

Feb 22, 2001

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 855

... terms of combining information and making predictions, game markets can be similarly valuable," said Dr. **David Pennock** of NEC Research

Institute, the study's lead author. "Another advantage of game markets is...

11/3,K/22 (Item 22 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
08444058 Supplier Number: 71941702 (USE FORMAT 7 FOR FULLTEXT)
**The Power of Play: Artificial Game Markets Offer Serious Predictions; NEC
Research Institute Study Finds That Online "Market Games" Can Accurately
Forecast Future Events.**
Business Wire, p2113
March 21, 2001
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 912
... and make that information available to the public in the form of
prices," said Dr. David Pennock, a research scientist at the NEC
Research Institute and the study's lead author. "While...

11/3,K/26 (Item 26 from file: 707)
DIALOG(R)File 707:The Seattle Times
(c) 2004 Seattle Times. All rts. reserv.
11098096
**Some leery of 'HailStorm' Microsoft's service stirs up online privacy
issues**
Seattle Times (SE) - Sunday April 8, 2001
By: Brier Dudley; Seattle Times technology reporter
Edition: Sunday Section: ROP Business Page: D1
Word Count: 1,139
... they are busy and when to interrupt them with important messages and
calls.
Microsoft researcher Eric Horvitz, who demonstrated the seeing and
listening "notification platform" at a conference in Seattle last week...

11/3,K/30 (Item 30 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
09332839 Supplier Number: 81464285 (USE FORMAT 7 FOR FULLTEXT)
Anticiparallelism. (Future Watch)
Anthes, Gary H.
Computerworld, p43
Jan 7, 2002
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 826
TEXT:
Microsoft Corp. researcher Eric Horvitz says he's trying to figure out
"what a computer should worry about when its..."

11/3,K/31 (Item 31 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2004 The Gale Group. All rts. reserv.
14348552 SUPPLIER NUMBER: 83374407 (USE FORMAT 7 OR 9 FOR FULL TEXT)
**A.I. Reboots: 2001 has come and gone, with dreams of a hal-like computer
long since abandoned. But in scaling back their promises,
artificial-intelligence researchers are finally starting to score
significant successes.**

Hiltzik, Michael

Technology Review (Cambridge, Mass.), 105, 2, 47(8)

March, 2002

ISSN: 1099-274X LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 3947 LINE COUNT: 00332

... is aimed at conjuring up real-world applications.

Here several teams under the direction of **Eric Horvitz**, senior researcher and manager of the Adaptive Systems and Interaction group, are working to improve...

11/3,K/34 (Item 34 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)

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10483195 Supplier Number: 101941084 (USE FORMAT 7 FOR FULLTEXT)

Minding your business: humanizing gadgetry to tame the flood of information. (human-machine interaction)

Weiss, Peter

Science News, v163, n18, p279(3)

May 3, 2003

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; General

Word Count: 2215

... are on a mission to change the way it feels to work with computers," says **Eric Horvitz** of Microsoft Research in Redmond, Wash. The fruit of all these efforts will be that...

11/3,K/38 (Item 38 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

(c)2004 The Gale Group. All rts. reserv.

16640182 SUPPLIER NUMBER: 112646934 (USE FORMAT 7 OR 9 FOR FULL TEXT)

10 emerging technologies that will change your world. (Cover Story)

Technology Review (Cambridge, Mass.), 107, 1, 32(16)

Feb, 2004

DOCUMENT TYPE: Cover Story ISSN: 1099-274X LANGUAGE: English

RECORD TYPE: Fulltext

WORD COUNT: 8074 LINE COUNT: 00678

... Agena hopes to deploy the technology internationally. "These things sound far out," says Microsoft researcher **Eric Horvitz**, who, with Heckerman, is a leading proponent of probabilistic methods. "But we are creating usable...

...Intel Architecture Research Laboratory

(Santa Clara, CA)

Manufacturing tools; open-source Bayesian software

:DAVID HECKERMAN

: **ERIC HORVITZ**

Microsoft Research

(Redmond, WA)

Spam filtering; advanced data-mining tools; intelligent office assistants

:MICHAEL I...

11/7/23 (Item 23 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)

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08484912 Supplier Number: 72631466 (THIS IS THE FULLTEXT)

Microsoft interface is watching you. (Company Business and Marketing)

Bradbury, Danny
Computer Weekly, p44
March 22, 2001

TEXT:

Microsoft chief executive Steve Ballmer revealed future enhancements to its user interface technology, including e-mail prioritisers, under research in Microsoft labs, when speaking at the Association for Computing Machinery AGM1 Conference in San Jose last week, writes Danny Bradbury.

Ballmer supervised a demonstration of Priorities, an artificial intelligence technology that uses data, such as header structure and information about relationships between different people, to work out which e-mails are important. The significant part of the technology, which would otherwise be little more than a smart mail filter, is its ability to gauge what the user is doing by using scheduler information, and even sensor technology to gain information from the ambient acoustics in a room. This helps it to work out what the user is doing and whether or not it should deliver e-mail.

This filtering technology, without the ambient sensors, underlies Outlook Mobile Manager (www.microsoft.com/Office/Outlook/mobile/default.htm), which was unveiled a couple of weeks ago and is currently available as a beta download. The product is designed for use with the Microsoft Mobile Information 2001 Server.

Eric Horvitz, a researcher at Microsoft, demonstrated the Notification Platform, which takes this technology a stage further. It monitors actions like desktop activity and could even have the potential to use "accelerometer" data to see whether or not a person is moving.

Such data about the end users' situation would be passed to the central notification manager in an XML format, which **Horvitz** refers to as the notification schema.

"The system knows that I am facing front and can see what applications I am using. It is also looking at my calendar," said **Horvitz**, adding that the system can also conduct a voice trace or sense him gazing at the display. "It uses this information to compute my space. Am I high-focus solo or am I low-focus solo? Am I sleeping?"

This is by no means original research. IBM has been conducting similar work with its BlueEyes project (www.almaden.ibm.com/cs/blueeyes), which was also on show at the conference, although, like the Microsoft project, no firm date has been given for a launch.

Other user interface technology on show from Microsoft included a 3D environment in which users could store different Internet Explorer sessions, pulling off different ones configured for different tasks.

It also demonstrated its Easyliving project, which used Soap-like access protocols to create an automated house environment in which devices were automatically controlled according to the position of the residents.

But the most interesting user interface technology is the most immediate -- speech recognition, which is being rolled out as part of the .net initiative and will be included in the imminent Office XP product. However, there was a basic contradiction in the speech that Ballmer made at the show. He said, "Some ask whether Microsoft and standards go together. The answer is yes."

It is interesting, then, that the company is not a member of the VoiceXML consortium. The group is developing XML-based voice control mechanisms for user interaction with server-side applications online which, given the mix of server-centric services and speech recognition in .net, places it squarely on Microsoft's radar.

This, along with Microsoft's increasing interest in speech recognition, should worry smaller companies in this area, which could do without this type of competition in the current economic climate.

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11/7/25 (Item 25 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
08508685 Supplier Number: 73071003 (THIS IS THE FULLTEXT)
Microsoft software to filter, rank e-mail.(Company Business and Marketing)(Brief Article)
Chidi, George A., Jr.
Network World, pNA
April 5, 2001
TEXT:

Microsoft researchers are developing e-mail software that learns what messages are important to users and which aren't, ranking them by urgency, Chairman and Chief Software Architect Bill Gates Tuesday said to technologists at the Computer-Human Interaction Conference in Seattle.

The software will learn user's preferences and priorities over time, Microsoft said. It will do this in part by examining which e-mails users read first, and which people users communicate with most often, performing a statistical analysis, said a spokeswoman from Microsoft's public relations firm.

Outlook Mobile Manager includes a test version of the e-mail ranking software as part of the optional "Priorities/Notification" add-on, the company said. Future versions of Microsoft Office and the Windows XP operating system will include e-mail ranking functions, Microsoft added.

Eventually, the ranking software will incorporate an "intelligent agent" which can interrupt user activities for really important messages, and which will be capable of judging the right time and place to do so.

Microsoft President and CEO Steve Ballmer first described the Priorities software last month at the ACM1: Beyond Cyberspace technology conference in San Jose.

"One of the interesting features about having a priority mail filter is that it becomes a sort of junk mail filter too," **Eric Horvitz**, an engineer with Microsoft Research Labs who joined Ballmer on stage, said at the time.

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File 647: CMP Computer Fulltext 1988-2004/Aug W4
File 674: Computer News Fulltext 1989-2004/Aug W3
File 16: Gale Group PROMT(R) 1990-2004/Sep 01
File 160: Gale Group PROMT(R) 1972-1989
File 47: Gale Group Magazine DB(TM) 1959-2004/Sep 01
File 148: Gale Group Trade & Industry DB 1976-2004/Sep 01
File 621: Gale Group New Prod. Annou. (R) 1985-2004/Sep 01
File 88: Gale Group Business A.R.T.S. 1976-2004/Aug 31
File 275: Gale Group Computer DB(TM) 1983-2004/Sep 01

Set	Items	Description
S1	1708	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR METHOD? ?)
S2	5192359	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ? OR TRAIT? ? OR CHARACTERISTIC? ?
S3	1480296	PROBAB? OR LIKELIHOOD
S4	339841	PERSONALITY OR PERSONALITIES
S5	2	S1(S)S4 [too recent]
S6	2172839	PERSONAL
S7	21517	S6()S2
S8	15	S1(S)S7
S9	5	S8/2001:2004
S10	10	S8 NOT S9
S11	4	RD (unique items)
S12	1752	S2(S)S3(S) (S4 OR S7)
S13	575544	AUTOMATED
S14	6112318	COMPUTER?
S15	3408997	INTERNET
S16	73	S12(S)S13:S15
S17	73	S16 NOT (S5 OR S8)
S18	59	RD (unique items)
S19	12	S18/2001:2004
S20	47	S18 NOT S19
S21	2199725	COLLABORAT? OR FILTER??? OR RECOMMEND?
S22	5	S20(S)S21 [not relevant]
S23	42	S20 NOT S22
S24	42	Sort S23/ALL/PD,A

11/3,AB,K/1 (Item 1 from file: 647)
DIALOG(R)File 647: CMP Computer Fulltext
(c) 2004 CMP Media, LLC. All rts. reserv.
01133537 CMP ACCESSION NUMBER: NTG19970801S0033
**Personal Touch - Web Sites Are Learning To Cater To Individual Needs To
Win More Customers**
Rich Karpinski
NETGUIDE, 1997, n 408, PG70
PUBLICATION DATE: 970801
JOURNAL CODE: NTG LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Features
WORD COUNT: 1849
TEXT:

Every company wants crowds of visitors to view its Web site, but it's easy to lose track of the real people-and the potentially rewarding one-to-one relationships-that lie behind a Web server's log statistics. That's changing, however, thanks to new technologies that let sites offer personalized services and real Web-based communities. With such

technologies, the Internet may become the most personal of all media. ... user doesn't necessarily know he/she is under watch, but benefits from it nonetheless.

Collaborative filtering is the second approach. Users make their **personal preferences** known by explicitly stating their interests or ranking their opinions on certain topics. The system...

11/3,AB,K/3 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
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06938169 Supplier Number: 58545239
Timelines to the Future Three Movers and Shakers Point the way.(Technology Information)

Searcher: The Magazine for Database Professionals, v8, n1, p80
Jan, 2000

Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Professional
Word Count: 7205

... of the age of information overload. By 2010, a number of technologies -- filtering, personal agents, **recommender systems**, sophisticated information merging and summarization and correlation, and effective selective dissemination of information -- have been...
...relationships with machines that act as personal assistants and create very complex structured databases of **personal preferences**, knowledge, and experience. Because of the rapid cycles of technological obsolescence, however, migrating these databases...

11/9/2 (Item 1 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
(c) 2004 IDG Communications. All rts. reserv.
057491

'Net Buzz

Byline: Chris Nerney
Journal: Network World Page Number: 50
Publication Date: February 10, 1997
Word Count: 547 Line Count: 50
Section Heading: Opinions
Caption(s): Photo, Jeet Singh
Text:
Art of the Deal, ATG-style

Boston-based Internet applications and development tools vendor Art Technology Group (ATG) has announced a \$3 million financing agreement with Internet uber-investor SOFTBANK Ventures, Inc.

It is the first outside financing accepted by ATG since its founding in 1991 by MIT grads Jeet Singh and Joseph Chung. The 100-employee company up till now has relied exclusively on - get this - revenues to fuel growth. (Obviously Singh and Chung haven't read up on how to do this Internet thing.)

Singh said that financing move was prompted by a desire to promote a new group of Java-based Internet management applications for organizations with consumer-oriented Web sites. "We thought the timing now was right to spend some money on marketing," he said.

Looking down the road, Singh said an IPO "is a reasonably likely occurrence in the next 24 months," though "it's not a given, and not a goal either."

Firefly nets some angels

Firefly Network, Inc., a collaborative filtering technology company, has purchased an agent applications developer based in San Francisco.

The purchase of NetAngels is part of Cambridge, Mass.-based Firefly's strategy to extend its open server platform, allowing businesses to create personalized communities online and to deliver personalized content to end-users.

Firefly is best known for its Web site, which uses **collaborative filtering** to direct members to music and movies they like best. Members submit information about **personal preferences**, which Firefly uses to point them toward stuff they'd like. As additional data is submitted, **collaborative filtering** allows Firefly to more precisely determine members' tastes.

Apparently Firefly is unaware of our preference for details, for it has declined to reveal terms of the purchase.

Why network managers annoy AOL

Mark Walsh heads a unit of America On Line that you don't hear many complaints about. Walsh works with businesses to set up 'private AOLs' - you could call them 'AOL-tranets' - that are inaccessible to the unwashed newbies, not that any of them can actually make a connection these days.

But Walsh has some complaints of his own. Serving on a panel at last week's Information Industry Association Venture Forum in New York, he was asked what posed the biggest threat to his unit's business. His answer: Fear, uncertainty and doubt among MIS managers about how Internet technology will affect their corporate networks and their jobs.

``When we go into a company, the last people we want to talk to are the MIS people,' ' Walsh said.

Ouch. Maybe he could just mail them some disks instead.

Search engine called for clipping

Excite, Inc., an Internet search engine company based in Mountain View, Calif., has launched a free news-clipping service for the Web.

The service, called, NewsTracker, allows users to search a database of more than 300 magazines and newspapers, track up to 20 news topics - yes, including post-mortems on the civil trial of O.J. Guilty - or browse several news categories. NewsTracker also utilizes intelligent agent software that allows users to customize information.

So you think a few cheap gifts and fast moves will earn you the privilege of being our Valentine? Guess again, schmoopy. If you really want to win us over, have FTD deliver us your most heartfelt Internet and intranet news. Contact Chris Nerney at (508) 820-7451 or cnerney@nww.com.

24/3,AB,K/22 (Item 22 from file: 674)

DIALOG(R)File 674:Computer News Fulltext

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052596

The New Shopping Network

Computerworld Retail Journal

Most retailers know that computer shopping may be the hottest thing since Sears delivered its first mail-order catalog. But the household names of the next century will be those retailers who get technology-smart before it's too late

Byline: Judy Newdom

Journal: Computerworld Page Number: R11

Publication Date: June 01, 1996

Word Count: 1915 Line Count: 181

Text:

... the first time. Not to demean world peace, but to the retailer, the

number of **computerized** households is of great significance. As more families get online, the importance of having a...

... privacy invasion, larceny and credit-card fraud. Consider the task of competition tracking. On the **Internet**, unknown retailers - the mom-and-pop shops of America and the world - can appear to...

... no longer reasonable. Worse, can a retailer afford to have a different policy on the **Internet** than it has in its store? Will customers tolerate those differences? What about pricing? Meeting...

...anywhere. Will customers rebel at the same store having different prices for products on the **Internet** than in the land-based store? How will policies govern purchases and returns between the...

... this long, however, may find new obstacles to passing through the electronic tollgate. In all **likelihood**, they'll find their offerings usurped by entrepreneurial newcomers. Already, more than 10,000 stores are listed in the **Internet** -Mall ([www. internet -mall.com/imall.htm](http://www.internet-mall.com/imall.htm)), and nearly all of them are unknown entries. But amid the...

... advantages to retailing on the Web. The biggest boon is customer willingness to identify their **personal preferences** on a **computer** and to customize offerings - even customers who are normally reluctant to give personal data to...

...service provider (www.peapod.com). This Web-based retailer succeeds in a market where non- **computer** -enabled attempts have failed. More than 10,000 Peapod customers pay a startup fee of...

... their customers. The reason is simple: convenience and customization. Customers can shop anytime, and their **computerized** shopping selection list "learns" to reflect their buying **preferences**, making it easier to enter their order each time they use the system. Using a...

... based selections, eventually coming up with a preferred shopping list. The customization power of the **computer** is creating the type of unchallenged loyalty that mall-based retailers only dream about. Peapod...

... grown up on the Web. There are independent nonfood companies, called "brokers," that use the **computer** as an ordering mechanism and create orders that print out at supermarket partners. There are...

... with some of their vendors in similar ways, they will have a distinct advantage in **Internet** commerce. Creative partnering ...amounts of unsold inventory. Remember: You don't have to have instantaneous delivery on the **Internet**. As with catalog ordering, customers are willing to wait a week or 10 days, as...

... data structures. Some data structures may need to be extracted and re-created just for **Internet** use. This data manipulation creates additional overhead for the retailer. Customers wanting access to their...

... buying. By the year 2000, an estimated 101 million people will be connected to the **Internet** worldwide. How much bandwidth will the retailer need to conduct business on this scale? Consider...

... s particularly intriguing to all retailers is that approximately 45 million people are using the **Internet** today. And although they are not all shopping, and some are too young to purchase...

24/3,AB,K/27 (Item 27 from file: 88)

DIALOG(R)File 88:Gale Group Business A.R.T.S.

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04929670 SUPPLIER NUMBER: 21211264

Warmer and more social: recent developments in cognitive social psychology.

Schwarz, Norbert

Annual Review of Sociology, v22, n1, p239(26)

Annual, 1998

ISSN: 0360-0572 LANGUAGE: English RECORD TYPE: Fulltext; Abstract

WORD COUNT: 12708 LINE COUNT: 01057

AUTHOR ABSTRACT: Since the late 1970s, theorizing in psychological social psychology has been dominated by the computer metaphor of information processing models, which fostered an emphasis on "cold" cognition and the conceptualization of individuals as isolated information processors. More recent research shows a renewed interest in the interplay of feeling and thinking in social judgment and in the role of unconscious processes in reasoning and behavior. Moreover, research into socially situated cognition and the interplay of communication and cognition highlights the role of conversational norms, social interdependence, and power in social judgment. Experimental research into these issues is reviewed. The emerging picture is compatible with social psychology's latest metaphor, humans as motivated tacticians who pragmatically adapt their reasoning strategies to the requirements at hand.

KEY WORDS: social judgment, social cognition, communication, mood, motivation

... predicted that the person is most likely an engineer, independent of whether the base-rate **probability** for any person in the sample being an engineer was .30 or .70. These predictions indicate that participants relied on individuating information of little diagnostic **value** at the expense of more diagnostic base-rate information, thus violating normative (Bayesian) models of...

...assumptions, see Gigerenzer 1991). Does this imply, however, that they did not note that the **personality** sketch provided to them was uninformative? Or did they draw on this information because they...

...Kahneman & Tversky's (1973) study supports the latter possibility (Schwarz et al 1991c). When the **personality** description was provided as a narrative allegedly written by a psychologist, participants again concluded that...

...was presented as a random sample of information about this person, allegedly drawn by a **computer** from a larger file assembled by psychologists, participants relied on the more diagnostic base-rate...

...a guarantee that does not extend to a random sample of information drawn by a **computer**. Hence, participants tried to make sense of the **personality** information provided to them in the former case, but were happy to ignore it in...

24/3,AB,K/33 (Item 33 from file: 16)

DIALOG(R) File 16:Gale Group PROMT(R)

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06570002 Supplier Number: 55475138

Relating brand equity to the likelihood of brand purchase; Rory Morgan

believes measures of brand loyalty need to track consumers' feelings as well as their actions.

Brand Strategy, p10(1)

August 13, 1999

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 2095

TEXT:

...of brand loyalty, ranging from general measures of brand belief, through measures of liking or **preference**, right up to rigorous purchase intention protocols. For the behavioural side of loyalty, we have...

...clipboards were invented. All the same, progress has been made, and the new generation of **computer**-based psychological models has taken us very

close. In developing our own Loyalty Driverssm approach...
...between different components of brand equity, and use these to make good predictions about the **probability** that a given customer will switch to a competitor. How do we do this? Well...
...Packard, Quaker Oats, Chevrolet, AT&T etc .However, one might consider brands such as Apple **Computer** and Versace to have derived their authority from innovation rather than heritage. (ii) Identification - the convergence of the brand's **values** with that of the person, and the degree to which the brand is regarded as...to 'talk down' to the individual. This is an aspect of the brand's imputed '**personality**'. Again, we distinguish three different paths to identification. The first is by bonding, where the brand is thought to share the same **values** or perspectives as the consumer. This could be particularly true for fashion brands, such as...
...for consumer perceptions of the 'equity' of the brand in terms of emotional and functional **characteristics** . However, the total '**value**' or utility of a brand proposition to a consumer must take some account of its...
...Thus far, it could be said that we have simply generated another model of brand **value** , and failed to make the important connection with brand choice. How do consumers choose what...
...we need to understand that what drives choice is not the absolute appeal of a '**value** proposition' (the management consultancy phrase for a branded product), but rather its relative appeal when...
...that the relationship between the size of the 'utility gap' between competing brands, and the **probability** of choosing the more valued brand (or switching to it), is not linear; and, moreover...
...factors, some attitudinal or psychological in origin, which act to 'inhibit' (but possibly 'promote') the **likelihood** that an individual will act on their evaluation of product alternatives. We call this the...
...that these factors operate at the individual consumer level. Therefore, each individual interprets relative brand **values** in the light of their own constraints. What are they? Well, our work with simulated...this fits together with functional performance. We understand the relevance of price, in creating brand **value** . And we understand how relative brand **values** interact with inertia factors inherent in the category to predict switching rates. And moreover, we...

Serial 10/686198

September 1, 2004

File 624:McGraw-Hill Publications 1985-2004/Aug 31

File 98:General Sci Abs/Full-Text 1984-2004/Jul

File 482:Newsweek 2000-2004/Aug 31

File 13:BAMP 2004/Aug W4

File 15:ABI/Inform(R) 1971-2004/Aug 31

File 122:Harvard Business Review 1971-2004/Jul

File 476:Financial Times Fulltext 1982-2004/Sep 01

File 623:Business Week 1985-2004/Aug 31

File 20:Dialog Global Reporter 1997-2004/Sep 01

File 369:New Scientist 1994-2004/Aug W4

File 370:Science 1996-1999/Jul W3

Set	Items	Description
S1	854	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR METHOD? ?)
S2	4491821	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ? OR TRAIT? ? OR CHARACTERISTIC? ?
S3	1801198	PROBAB? OR LIKELIHOOD
S4	247572	PERSONALITY OR PERSONALITIES
S5	1	S1(S) S4 [too recent]
S6	1810286	PERSONAL
S7	250986	AUTOMATED
S8	2374347	COMPUTER?
S9	2379214	INTERNET
S10	1963784	COLLABORAT? OR FILTER??? OR RECOMMEND?
S11	17127	S6() S2
S12	4	S1(S) S11 NOT S5
S13	4	RD (unique items) [1 duplicate; 3 not relevant or too recent]
S14	115	(S4 OR S11) (S) S3(S) S10
S15	115	S14 NOT (S5 OR S12)
S16	111	RD (unique items)
S17	54	S16/2001:2004
S18	57	S16 NOT S17
S19	6	S18(S) S7:S9 [not relevant]

File 2:INSPEC 1969-2004/Aug W4

File 6:NTIS 1964-2004/Aug W4

File 7:Social SciSearch(R) 1972-2004/Aug W4

File 11:PsycINFO(R) 1887-2004/May W5

File 34:SciSearch(R) Cited Ref Sci 1990-2004/Aug W4

File 35:Dissertation Abs Online 1861-2004/Jul

File 65:Inside Conferences 1993-2004/Aug W5

File 94:JICST-EPlus 1985-2004/Aug W1

File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Jul

File 142:Social Sciences Abstracts 1983-2004/Jul

File 144:Pascal 1973-2004/Aug W4

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

File 473:FINANCIAL TIMES ABSTRACTS 1998-2001/APR 02

File 475:Wall Street Journal Abs 1973-2004/Aug 31

File 239:Mathsci 1940-2004/Oct

File 202:Info. Sci. & Tech. Abs. 1966-2004/Jul 12

Set	Items	Description
S1	2024	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR METHOD? ?)
S2	6775841	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ? OR TRAIT? ? OR CHARACTERISTIC? ?
S3	1521535	PROBAB? OR LIKELIHOOD

Serial 10/686198

September 1, 2004

S4 393308 PERSONALITY OR PERSONALITIES
 S5 4 S1(S)S4
 S6 496976 PERSONAL
 S7 257099 AUTOMATED
 S8 3017737 COMPUTER?
 S9 236039 INTERNET (January 1995)
 S10 1398603 COLLABORAT? OR FILTER??? OR RECOMMEND?
 S11 11 S1 AND S4
 S12 9 S11/2001:2004
 S13 2 S11 NOT S12
 S14 21301 S6()S2
 S15 18 (S1 AND S14) NOT S11
 S16 14 S15/2001:2004
 S17 4 S15 NOT S16
 S18 402 (S4 OR S14) AND S3 AND S10 AND S7:S9
 S19 4 S10/TI,DE AND S18 [too recent]
 S20 401 S18 NOT (S11 OR S15)
 S21 396 RD (unique items)
 S22 286 S21/2001:2004
 S23 110 S21 NOT S22
 S24 0 S1 AND S23
 S25 109 (S4 OR S14) (S)S3(S)S10
 S26 5 S23 AND S25
 S27 103 S25 NOT (S11 OR S15 OR S26)
 S28 23 S27/2001:2004
 S29 80 S27 NOT S28
 S30 65 RD (unique items)
 S31 65 Sort S30/ALL/PY,A

13/7,K/1 (Item 1 from file: 11)

DIALOG(R)File 11:PsycINFO(R)

(c) 2004 Amer. Psychological Assn. All rts. reserv.

0001616200 1998-10886-001

Internet paradox: A social technology that reduces social involvement and psychological well-being?

AUTHOR: Kraut, Robert; Patterson, Michael; Lundmark, Vicki; Kiesler, Sara; Mukophadhyay, Tridas; Scherlis, William

AUTHOR AFFILIATION: Carnegie Mellon U, Human Computer Interaction Inst-- Pittsburgh--PA--US

JOURNAL: American Psychologist--<http://www.apa.org/journals/amp.html>, Vol 53(9), 1017-1031, Sep, 1998

PUBLISHER: American Psychological Assn--US--<http://www.apa.org>

ABSTRACT: journal abstract- The Internet could change the lives of average citizens as much as did the telephone in the early part of the 20th century and television in the 1950s and 1960s. Researchers and social critics are debating whether the Internet is improving or harming participation in community life and social relationships. This research examined the social and psychological impact of the Internet on 169 people in 73 households during their first 1 to 2 years on-line. We used longitudinal data to examine the effects of the Internet on social involvement and psychological well-being. In this sample, the Internet was used extensively for communication. Nonetheless, greater use of the Internet was associated with declines in participants' communication with family members in the household, declines in the size of their social circle, and increases in their depression and loneliness. These findings have implications for research, for public policy, and for the design of

technology. (PsycINFO Database Record (c) 2003 APA, all rights reserved)
CITED REFERENCES:

- ...Resnick, P. & Varian, H. (1997). **Recommender systems** : Introduction to the special section. Communications of the ACM, 40, 56-58...
...Cutrona, C. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. Journal of **Personality** and Social Psychology, 39, 472-480. (PsycINFO Accession Number: 1981-24820-001)...

17/7,K/1 (Item 1 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

6288042 INSPEC Abstract Number: C1999-08-7250R-011

Title: Collaborative filtering using weighted majority prediction algorithms

Author(s): Nakamura, A.; Abe, N.
Author Affiliation: C&C Media Res. Labs., NEC Corp., Kawasaki, Japan
Conference Title: Machine Learning. Proceedings of the Fifteenth International Conference (ICML'98) p.395-403
Editor(s): Shavlik, J.
Publisher: Morgan Kaufmann Publishers, San Francisco, CA, USA
Publication Date: 1998 Country of Publication: USA x+580 pp.
Material Identity Number: XX-1998-02164
Conference Title: Proceedings of Machine Learning (ICML-98)
Conference Date: 24-27 July 1998 Conference Location: Madison, WI, USA
Language: English Document Type: Conference Paper (PA)
Treatment: Practical (P)

Abstract: We apply various generalizations of weighted majority prediction algorithms for on-line prediction of binary relations to the problem of predicting **personal preferences** over information contents, which is a key issue in **collaborative filtering**. Note that the **collaborative filtering** problem can be cast as learning a binary relation between the users (as the rows) and the contents (as the columns). The original prediction algorithm of Goldman and Warmuth (1995) makes its prediction by majority voting by the rows with observed data in the same column, weighted by the believed similarity between the rows. We propose a generalization G-Learn-Relation of their algorithm to the multi-valued setting, and empirically demonstrate that it performs better than existing filtering methods based on correlation coefficients, both on simulated and real data. The performance comparison was done in terms of the total number of prediction mistakes and the measures of precision and recall. Additionally, we propose a version of G-Learn-Relation that makes use of indirect evidence available as believed similarity between other rows, and another version in which both row similarity and column similarity are used for prediction. In both cases, significant improvement was observed in experiments involving simulated data. Finally, we give a theoretical performance guarantee for G-Learn-Relation in terms of an upper bound on the worst case number of mistakes, which together with a lower bound on the number of mistakes made by a correlation-based method establishes that its worst case performance is better than the correlation-based methods. (9 Refs)

Subfile: C Copyright 1999, IEE

Identifiers: **collaborative filtering** ; ...
... **personal preference** ;

17/7,K/2 (Item 1 from file: 11)

DIALOG(R) File 11:PsycINFO(R)

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.0001767158 2001-14331-003

User modeling for adaptive news access.

AUTHOR: Billsus, Daniel; Pazzani, Michael J.

AUTHOR AFFILIATION: U California, Dept of Information & Computer Science--
Irvine--CA--US

JOURNAL: User Modeling & User-Adapted Interaction--

http://www.wkap.nl/journalhome.htm/0924-1868, Vol 10(2-3), 147-180, 2000

PUBLISHER: Kluwer Academic Publishers--Netherlands--http://www.wkap.nl

ABSTRACT: Presents a framework for adaptive news access, based on machine learning techniques specifically designed for this task. The interface and design of 2 deployed news agents that are part of the described architecture are presented. While the 1st agent provides personalized news through a web-based interface, the 2nd system is geared towards wireless information devices, such as personal digital assistants, and cell phones. Based on implicit and explicit user feedback, the agents use a machine learning algorithm to induce individual user models. The system's performance, based on data collected from regular system users, is empirically evaluated. The results provide empirical evidence for the utility of the hybrid user model, and suggest that effective personalization can be achieved without requiring any extra effort from the user. (PsycINFO Database Record (c) 2003 APA, all rights reserved)

CITED REFERENCES:

...A., Miranda, T., Murnikov, P., Netes, D. and Sartin, M.: 1999, Combining content-based and collaborative filters in an online newspaper. ACM SIGIR Workshop on Recommender Systems, Berkeley, CA...

...Sakagami, H. and Kamba, T.: 1997, Learning personal preferences on online newspaper articles from user behaviors. Proceedings of the Sixth International World Wide Web...

17/7,K/4 (Item 1 from file: 94)

DIALOG(R)File 94:JICST-EPlus

(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.

04595305 JICST ACCESSION NUMBER: 00A0394244 FILE SEGMENT: JICST-E

Proposal of TV Program Recommendation Method based on Reinforcement Learning in Regional Society and Initial Evaluation.

KINONE TOMOYA (1); ISHITANI NORIHIKO (1); TANO SHUN'ICHI (1)

(1) Univ. of Electro-Communications, Grad. Sch.

Faji Shisutemu Shinpojiumu Koen Ronbunshu, 1999, VOL.15th, PAGE.767-770,
FIG.5, TBL.1

JOURNAL NUMBER: L0486AAL ISSN NO: 1341-9080

UNIVERSAL DECIMAL CLASSIFICATION: 621.397+654.197

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Conference Proceeding

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: In the near future, TV will be totally digitized and deeply combined with the information systems such as the personal computers. In this paper, first, we analyze what functions are needed and what kind of problems must be coped with. Based on the analysis, we propose a new method to estimate the personal preference of digital TV viewers. We testified to validity of the new method. (author abst.)

26/6/1 (Item 1 from file: 2)

5706880 INSPEC Abstract Number: C9711-7330-112

Title: Nonparametric resampling and modelling procedure for testing circannual markers of depressive disorders

Publication Date: 1997

26/6/2 (Item 1 from file: 6)
1934701 NTIS Accession Number: AD-A299 967/0
Decision Modeling of Psychological and Clinical Factors in Assessing
Treatment Alternatives for Lobular Carcinoma in Situ
(Annual rept. 1 Aug 94-31 Jul 95)
31 Aug 95

26/6/3 (Item 1 from file: 7)
02890105 Genuine Article#: UH965 Number of References: 49
Title: THE RISKY AND PROTECTIVE MOTORCYCLING OPINIONS AND BEHAVIORS OF
YOUNG ON-ROAD MOTORCYCLISTS IN NEW-ZEALAND (Abstract Available)
1996

26/6/4 (Item 1 from file: 11)
0001133994 1991-03239-001
Statistical power of psychological research: What have we gained in 20
years?
1990

26/6/5 (Item 1 from file: 35)
1045354 ORDER NO: AAD89-02496
PERCEPTUAL AND COGNITIVE FACTORS IN OBSESSIVE-COMPULSIVE BEHAVIOR AND THE
DEVELOPMENT OF A COMPUTER MOUNTED PERSONALITY INSTRUMENT
Year: 1988

File 6:NTIS 1964-2004/Aug W4
 File 7:Social SciSearch(R) 1972-2004/Aug W4
 File 11:PsycINFO(R) 1887-2004/May W5
 File 34:SciSearch(R) Cited Ref Sci 1990-2004/Aug W4
 File 35:Dissertation Abs Online 1861-2004/Jul
 File 65:Inside Conferences 1993-2004/Aug W5
 File 94:JICST-EPlus 1985-2004/Aug W1
 File 142:Social Sciences Abstracts 1983-2004/Jul
 File 144:Pascal 1973-2004/Aug W4
 File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
 File 473:FINANCIAL TIMES ABSTRACTS 1998-2001/APR 02
 File 475:Wall Street Journal Abs 1973-2004/Aug 30
 File 239:Mathsci 1940-2004/Oct

Set	Items	Description
S1	1607	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR ALGORITHM? ? OR METHOD?)
S2	3077650	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ?
S3	803495	PROBABILIT? OR PROBABILISTIC? OR LIKELIHOOD
S4	385391	PERSONALITY
S5	6596	BROWSER? ?
S6	33	S1 AND S2 AND S3
S7	27	RD (unique items)
S8	20	S7/2001:2004
S9	7	S7 NOT S8
S10	7	Sort S9/ALL/PY,A
S11	3	S1(S) S4
S12	3	S11 NOT S6
S13	3	RD (unique items) [too recent]
S14	418	S1 AND S2
S15	64	S1 AND S3
S16	4136	S2 AND S3 AND S4
S17	6	S4 AND S14
S18	3	S17 NOT (S6 OR S11)
S19	3	RD (unique items) [too recent]
S20	1	S15 AND S4 [too recent]
S21	4	S5 AND S16 [too recent]

10/6/3 (Item 3 from file: 144)
 12870338 PASCAL No.: 97-0130693
Magnitude of type I error when single-locus linkage analysis is maximized over models : A simulation study
 1997

10/7/4 (Item 4 from file: 7)
 DIALOG(R) File 7:Social SciSearch(R)
 (c) 2004 Inst for Sci Info. All rts. reserv.
 03205915 Genuine Article#: ZY292 Number of References: 57
Title: Exploring versus exploiting when learning user models for text recommendation
 Author(s): Balabanovic M (REPRINT)
 Corporate Source: STANFORD UNIV, DEPT COMP SCI/STANFORD//CA/94305 (REPRINT)
 Journal: USER MODELING AND USER-ADAPTED INTERACTION, 1998, V8, N1-2, P 71-102
 Publisher: KLUWER ACADEMIC PUBL, SPUIBOULEVARD 50, PO BOX 17, 3300 AA DORDRECHT, NETHERLANDS

Language: English Document Type: Article

Abstract: The text recommendation task involves delivering sets of documents to users on the basis of user models. These models are improved over time, given feedback on the delivered documents. When selecting documents to recommend, a system faces an instance of the exploration/exploitation tradeoff. Whether to deliver documents about which there is little certainty, or those which are known to match the user model learned so far. In this paper, a simulation is constructed to investigate the effects of this tradeoff on the rate of learning user models, and the resulting compositions of the sets of recommended documents, in particular World-Wide Web pages. Document selection strategies are developed which correspond to different points along the tradeoff. Using an exploitative strategy, our results show that simple **preference** functions can successfully be learned using a vector-space representation of a user model in conjunction with a gradient descent algorithm, but that increasingly complex **preference** functions lead to a slowing down of the learning process. Exploratory strategies are shown to increase the rate of user model acquisition at the expense of presenting users with suboptimal recommendations; in addition they adapt to user **preference** changes more rapidly than exploitative strategies. These simulated tests suggest an implementation for a simple control that is exposed to users, allowing them to vary a system's document selection behavior depending on individual circumstances.

10/7/5 (Item 5 from file: 35)

DIALOG(R)File 35:Dissertation Abs Online
(c) 2004 ProQuest Info&Learning. All rts. reserv.
01809061 ORDER NO: AADAA-I9936993

Probabilistic preference modeling

Author: Chien, Yung-Hsin

Degree: Ph.D.

Year: 1998

Corporate Source/Institution: The University of Texas at Austin (0227)

Supervisor: Edward I. George

Source: VOLUME 60/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 3356. 111 PAGES

ISBN: 0-599-38307-0

The first part of this dissertation addresses the general setup where a set of items is partially evaluated by a set of judges, in the sense that not every item is evaluated by every judge. For this setup, the **collaborative filtering** problem is to predict the missing evaluations from the observed evaluations. As opposed to current **collaborative filtering** solutions based on classical statistical methods such as linear correlation, a **Bayesian** solution is proposed. The main idea is to model subjects' **ratings** as realizations of a **probability** distribution which captures similarity across items and individuals. Data is then used to obtain posterior distributions which can be explored using Markov chain Monte Carlo (MCMC) methods such as the Gibbs sampler and the reversible jump Metropolis-Hastings algorithms. One important advantage of the Bayesian approach is the robustness to different patterns of missingness in the item-judge evaluations.

The second part of this dissertation addresses consumers' shopping **preferences** in retail stores. Manufacturers and retailers alike are interested in the link between the selection of a particular brand by a shopper and any resulting impact on store performance. Unfortunately, the

best developed tools for analyzing retail sales data focus on the relationship between a brand's marketing activity and the sales of that brand itself, or, possibly, other brands in the category. We propose to establish a link between the selection of a particular brand and the size and **value** of the marketbasket containing that brand, statistics more closely related to store performance. In addition we offer an alternative to the model of random inclusion of items in marketbaskets implicitly used by industry today. The alternative model of random inclusion is used as a benchmark against which to compare the observed average **value** of marketbaskets containing a particular brand. To assess the contrasts between the brand choices and random choices in terms of basket **values**, we decompose the gap between observed marketbasket **value** and model-defined expected marketbasket **value** into quantity synergy (the dollar **value** of the brand's propensity to occur in baskets with more items than expected) and price synergy (the dollar **value** of the brand's propensity to occur in baskets with more expensive items than expected).

File 16:Gale Group PROMT(R) 1990-2004/Aug 31
 File 160:Gale Group PROMT(R) 1972-1989
 File 148:Gale Group Trade & Industry DB 1976-2004/Aug 31
 File 47:Gale Group Magazine DB(TM) 1959-2004/Aug 31
 File 621:Gale Group New Prod.Annou.(R) 1985-2004/Aug 31
 File 88:Gale Group Business A.R.T.S. 1976-2004/Aug 30
 File 75:TGG Management Contents(R) 86-2004/Aug W4
 File 275:Gale Group Computer DB(TM) 1983-2004/Aug 31
 File 674:Computer News Fulltext 1989-2004/Aug W3
 File 647:CMP Computer Fulltext 1988-2004/Aug W4

Set	Items	Description
S1	1749	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR ALGORITHM? ? OR METHOD?)
S2	4872331	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ?
S3	290281	PROBABILIT? OR PROBABILISTIC? OR LIKELIHOOD
S4	182554	PERSONALITY
S5	361849	BROWSER? ?
S6	9	S1(S) S2(S) S3
S7	5	RD (unique items)
S8	553	S1(S) S2
S9	20	S1(S) S3
S10	154	S2(S) S3(S) S4
S11	0	S4(S) S8
S12	11	S9 NOT S6
S13	5	RD (unique items)
S14	130	RD S10 (unique items)
S15	0	S1 AND S14
S16	26	S14/2001:2004
S17	104	S14 NOT S16
S18	0	S17 AND S5
S19	17	S4/TI,DE AND S17
S20	17	S19 NOT (S6 OR S9)
S21	17	RD (unique items)
S22	17	Sort S21/ALL/PD,A [not relevant]

7/7/2 (Item 2 from file: 16)

DIALOG(R) File 16:Gale Group PROMT(R)

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04375261 Supplier Number: 46416378 (THIS IS THE FULLTEXT)

Internet Capital Group announces Venture Funding Agreement with Empirical Media to launch WiseWire Web Service.

Business Wire, p5281026

May 28, 1996

TEXT:

PITTSBURGH--(BUSINESS WIRE)--May 28, 1996--The Internet Capital Group, a venture subsidiary of Safeguard Scientifics, announced Tuesday an agreement to provide venture capital to Empirical Media, which is launching WiseWire(SM), a new online filtering service that organizes and delivers a super-personalized stream of information from the Internet and thousands of other online sources.

WiseWire, the world's first Smart Internet Filter, will be formally released in the third quarter of this year.

"We are extremely excited to be working with Safeguard Scientifics," said Ken Lang, Empirical Media's founder and chief executive officer, who built the original prototype of WiseWire in connection with his Ph.D. work

at Carnegie Mellon University.

"Our partners at Safeguard Scientifics have been extremely successful in bringing next generation technologies to market, and with their guidance I am confident WiseWire will get the widest possible exposure."

"What appealed to us most about WiseWire is its uniqueness," said Walter Buckley, president of the Internet Capital Group. "No other technology comes close to providing WiseWire's quality of filtering services. This literally has the potential to redefine how the Internet is used."

Empirical Media developed WiseWire to solve the problem of information overload for people who gather information from online sources. WiseWire's intelligent agents continuously filter the World Wide Web, Usenet newsgroups and many other online sources for information applicable to each of its users.

In addition, as a Smart Internet Filter, WiseWire dynamically adapts to meet each user's areas of interest while they use the system. Users retrieving information in WiseWire's Web service click on a simple **rating** bar to state their opinions about whether an article read was of interest or not. As the users' interests evolve, the WiseWire filtering technology is able to recognize this and update the online information accordingly.

The quality of WiseWire information is also driven by the **preferences of others who typically share common opinions**, a process called **collaborative filtering**. The first readers of a document help judge its **value** for later readers, with a far greater **likelihood** that unappealing content will be filtered before it is presented to a user.

In effect, WiseWire provides superior online information because of the recommendations of a community of Web users.

"WiseWire uses the latest developments in machine learning to continually adapt to users' preferences, so it can deliver information of greater interest each time they use the system," said Empirical Media's Lang. "The ability to dynamically meet the interests of its users can personalize the Internet for each individual, while the combination of adaptive and collaborative filtering provides the highest quality of online information available."

Empirical Media also announced a new strategic partnership with SmithKline Beecham Consumer Healthcare, one of the world's leading healthcare companies. As part of the alliance, SmithKline Beecham will purchase advertising on the WiseWire Web site, and Empirical Media will provide online technical and business services to SmithKline Beecham.

The Internet Capital Group, a subsidiary of Wayne, Pa.-based Safeguard Scientifics, invests in companies in the burgeoning online and Internet marketplace. Safeguard Scientifics is publicly traded and offers its shareholders rights to acquire stock at the initial offering price when its companies go public.

Notable IPOs for Safeguard Scientifics include Novell, QVC and Cambridge Technology Partners.

Empirical Media Corp., headquartered in Pittsburgh, is the leader in Collective Intelligence Technology and the developer of WiseWire, the world's first Smart Internet Filter.

CONTACT: Empirical Media

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mlimbach@empirical.com

or

RMR & Associates, Inc.

Catherine Canterbury, press liaison, 301/217-0009

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7/3,AB,K/5 (Item 3 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.
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04759447 SUPPLIER NUMBER: 20561632
Creating a custom-mass production channel on the Internet.
Elofson, Greg; Robinson, William N.
Communications of the ACM, v41, n3, p56(7)
March, 1998
ISSN: 0001-0782 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3884 LINE COUNT: 00329
ABSTRACT: Advances in information technology, particularly the Internet, have allowed sellers to provide buyers with custom-made goods at prices comparable with generic products. However, a custom-mass production framework that creates greater economies of scale compared with the supplier-driven approach is developed. In this framework, like-minded buyers are formed to create a market. Afterwards, these buyers agree upon a common set of product attributes. Finally, these attributes are communicated to the suppliers.
... costs while employing methods for finding like-minded buyers generally fall under the aegis of **collaborative filtering** (see the March 1997 Communications). **Collaborative filtering** entails the use of various **attributes**, often represented as weighted **attribute - value** vectors, that are used to place individuals in groups with similar tastes and/or **preferences**. Products and services that interest one member of a group are seen as having a better-than-chance **probability** of interesting the remaining members of that group.
For example, Firefly (9) uses collaborative filtering...

13/7/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
06633797 Supplier Number: 55746809 (THIS IS THE FULLTEXT)
New news technology. (Autonomy's Content Server content-personalization solution) (Product Information)
Gunnerson, Gary
PC Magazine, p98
Oct 5, 1999
TEXT:
While content sites continue to build new services based on keywords or **collaborative filtering**, other companies are conjuring up new ways of anticipating more accurately what information you need. Perhaps the most promising technology comes from Autonomy, which has devised a method of extracting concepts from content by using statistical **probabilities** and pattern matching. Autonomy evaluates personal profiles, content, and queries in the same manner. It then compares the extracted concepts and provides relevant content matches.
LineOne, the online outlet of Rupert Murdoch's News Corp., showcases Autonomy's technology. As you view a news story, LineOne uses Autonomy's Content Server and dynamically generates links to related stories. This feature works much like Alexa Internet parts of which are now included in the most recent versions of browsers from Microsoft and Netscape but unlike Alexa, which relies on a predefined database of related sites, Autonomy generates its list of links in real time.
If you frequently track specific subjects, you can train LineOne

agents to gather all related stories by typing in a sentence or series of words. When you invoke your agent by clicking on its link, Autonomy presents a list of hyperlinks. At first glance, we found that many document titles seemed unrelated, because Autonomy searches according to concept rather than just the keyword. On closer examination, we found Autonomy to be uncannily accurate. Expect to see many other content-based sites adopt Autonomy in the near future, including Associated Press, BBC, Reuters Plus, and Xoom.

Unlike Autonomy, which can be more easily grafted onto an existing Web site, some content-personalization packages require a little more work and a larger commitment. Examples include Broad Vision's One-To-One line and Vignette's StoryServer, which are both touted as complete solutions for Internet Relationship Management. These products not only seek to deliver customized content to Web site visitors, they also help their customers make business decisions by providing an environment for managing content, exchanging content with partners, and analyzing behavior of site visitors. To see Vignette's StoryServer in action, check out Atevo Travel, the Chicago Tribune, or our own ZDNet site. The Milwaukee Journal Sentinel's City Pages Plus is a good example of BroadVision's One-to-One solution.

Eventually, content-personalization tools will grow so advanced that they will become transparent. You'll simply see the information that you need or that interests you as you jump around the Web. Although the Web continues to grow at a mind-boggling rate, this technology will help ensure that it feels like home to you.

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13/7/2 (Item 1 from file: 148)
DIALOG(R) File 148:Gale Group Trade & Industry DB
(c)2004 The Gale Group. All rts. reserv.
09059646 SUPPLIER NUMBER: 18812229
Improbable inspiration. (use of the Bayesian networks concept by Microsoft for software development) (Technology Information)
Helm, Leslie; Burns, Robert
Los Angeles Times, v115 , Mon ed, col 1, pD1
Oct 28, 1996

13/3,AB,K/3 (Item 1 from file: 47)
DIALOG(R) File 47:Gale Group Magazine DB(TM)
(c) 2004 The Gale group. All rts. reserv.
04699321 SUPPLIER NUMBER: 19168003 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Future agent software. (intelligent software promises to personalize Web) (Looking Forward: Technology on the Way) (Technology Information) (Cover Story)
Dragan, Richard V.
PC Magazine, v16, n6, p190(2)
March 25, 1997
DOCUMENT TYPE: Cover Story ISSN: 0888-8507 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 1121 LINE COUNT: 00091
ABSTRACT: Intelligent agent software promises to transform future user interaction with the Web by providing highly personalized content. The most sophisticated agents can learn by following the user's examples, watching a browsing session and locating specific information on the basis of what a user might be interested in. 'Spider agents' are already common and are used in search engines. Collaborative filtering, a new technology developed

by Firefly and Net Perceptions, offers a productive model for filtering requests based on how closely data matches defined user preferences. Anchored agents work primarily on either the client or server side; mobile agents are more complex and more promising because they can move among servers to locate what they need. General Magic pioneered the mobile-agent approach in its Telescript environment. Mobile agents are currently used on intranets, but standards will have to be defined before they can be used on the public Internet.

... expectations.

The next generation of applied research--in the form of agents--has a greater **likelihood** of success, because it involves new models of computer "intelligence." New technologies such as **collaborative filtering** (developed by Firefly and Net Perceptions) offer a productive model that fits within an extraordinary...

...such as books and CDs) or content (such as news stories) can be ascertained with **collaborative filtering**.

Where the older AI technology tried to make computers think like people (which had only...

File 624:McGraw-Hill Publications 1985-2004/Aug 30
File 98:General Sci Abs/Full-Text 1984-2004/Jul
File 482:Newsweek 2000-2004/Aug 24
File 13:BAMP 2004/Aug W4
File 15:ABI/Inform(R) 1971-2004/Aug 31
File 122:Harvard Business Review 1971-2004/Jul
File 476:Financial Times Fulltext 1982-2004/Aug 31
File 623:Business Week 1985-2004/Aug 30
File 20:Dialog Global Reporter 1997-2004/Aug 31
Set Items Description
S1 858 COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-
) (SYSTEM? ? OR TECHNIQUE? ? OR ALGORITHM? ? OR METHOD?)
S2 4237061 ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES
OR RATING? ?
S3 263225 PROBABILIT? OR PROBABILISTIC? OR LIKELIHOOD
S4 171038 PERSONALITY
S5 137925 BROWSER? ?
S6 4 S1(S)S2(S)S3
S7 4 RD (unique items) [1 duplicate; 3 not relevant or too recent]
S8 242 S1(S)S2
S9 6 S1(S)S3
S10 84 S2(S)S3(S)S4
S11 2 S9 NOT S6
S12 2 S8(S)S4:S5
S13 0 S1 AND S10
S14 19 S10/TI,DE,AB
S15 19 S14 NOT (S6 OR S9 OR S12)
S16 18 RD (unique items)
S17 5 S16/2001:2004
S18 13 S16 NOT S17
S19 13 Sort S18/ALL/PD,A

11/3,AB,K/2 (Item 2 from file: 15)

DIALOG(R)File 15:ABI/Inform(R)

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01725564 03-76554

Reading your mind, reaching your wallet

Lach, Jennifer

American Demographics v20n11 PP: 39-42 Nov 1998 ISSN: 0163-4089

JRNL CODE: ADE

WORD COUNT: 1355

ABSTRACT: As the online shopping mall continues to add new stores, many of the Web's top retailers are banking on real-time personal recommendations to convert lookers into loyal repeat buyers. Amazon.com, Barnes & Noble, Moviefinder, CDnow, and others tailor targeted suggestions to their customers. In a recent study of 25 online merchants by Jupiter Communications, 40% said they already use recommendation technology at their Web sites; 93% of those that currently do not plan to add the application within the next year. Suggestive selling, Jupiter posits, could contribute 34% of total sales revenues within the first year of implementation. Pumping out these recommendations is a technology called **collaborative filtering**, which looks at individual consumers' behavioral data to predict the future behavior of like-minded people. **Collaborative filtering** sharpens its suggestions - and increases the **likelihood** of a sale - as it learns more about the customer.

12/3,AB,K/1 (Item 1 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
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03039160

Net Perceptions Now the Single Source for All Internet Personalization Needs
PR NEWSWIRE

October 07, 1998

JOURNAL CODE: WPRW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 769

New Product Breakthroughs Bolster Industry Leader's Track Record of Firsts While Launching the Next Generation of Recommendation Solutions NEW YORK, Fall Internet World '98, Oct. 7 /PRNewswire/ -- With its new generation of Internet personalization products, Net Perceptions(TM) is providing the industry's first multi-technology Realtime Recommendation Platform, allowing companies to meet all of their recommendation needs from a single reliable source -- a record-setting first for online technology. "Internet marketers are seeing realtime recommendation technologies as essential for building rewarding, enduring one-to-one relationships with their customers," said Steve Larsen, Net Perceptions VP of Marketing and Business Development. "And now, they can get the optimum technology for every recommendation and personalization task from a single, reliable source." Industry watchers agree. Allen Bonde, director of advisory services at The Extraprise Group said, "After a couple of years in the background, personalization is ready for primetime. But a key to mainstream adoption is recognizing that one size does not fit all. That's why an integrated approach such as Net Perceptions' Realtime Recommendation Platform makes so much sense, and offers to bring the benefits of personalization to the complete Internet customer lifecycle." Three New Product Releases Net Perceptions for E-commerce 4.0 A true 24x7 enterprise-class solution for personalizing recommendations to each customer's individual wants, needs and preferences. This personalization turns browsers into buyers, increases cross-sells and up-sells, and builds customer loyalty. Performance and scalability 10 times greater than that of any competitive product, and new features allow an unprecedented level of application customization. Net Perceptions customers can now stand out by doing business their own special way. The product can be deployed and measurably increase sales and profits in under a week. Net Perceptions for Ad Targeting This new product increases Web site advertising revenues by delivering higher click-through rates and a lower cost per click for advertisers. The product automatically puts the right ads in front of the right site visitors by **learning about the individual interests and tastes of every visitor**. Ad targeting becomes increasingly intelligent over time, as more is learned about each visitor with every visit. The result is increasingly rewarding long-term relationships between sites and their advertisers. It is the only product that can be deployed and measurably improve ad targeting in less than 24 hours. This product has its origins in a relationship Net Perceptions formed earlier this year with Neural Technologies Corporation. Net Perceptions Recommendation Engine 4.0 Designed to increase visitor frequency and loyalty for Web sites focused on content delivery, community building or brand building. The engine does this by continually learning more about the individual interests and tastes of each site visitor with every visit and by dynamically separating the wheat from the chaff based on that knowledge. Every time they come back, visitors see more of what matters to them and less of what doesn't. This personalization streamlines navigation and increases the site's relevancy to each visitor. Additional Release by Year's End Net Perceptions for Call

Centers. Personalized realtime cross-sell and up-sell recommendations to increase inbound and outbound sales and profits while deepening customer relationships. Internet World Fall Located at Internet World Fall's Booth #2705, Net Perceptions will preview for press and trade show audiences its three new products: Net Perceptions for E-Commerce Version 4.0, Net Perceptions for Ad Targeting, and Net Perceptions Recommendation Engine 4.0. About Net Perceptions Incorporated in 1996, Net Perceptions is now the world's preeminent developer and supplier of realtime recommendation technologies. It is the originator of online **collaborative filtering** technology, the most accurate predictor of individual behavior available. Also the originator of the Realtime Recommendation Platform, which integrates **collaborative filtering**, neural network, fuzzy logic and genetic algorithm technologies, and automatically applies the optimum technology to whatever recommendation or personalization task is at hand. Net Perceptions' founders include the original team of University of Minnesota researchers who pioneered the concepts and applications of **collaborative filtering** and lead programmers from supercomputer maker Cray Research. Net Perceptions has a customer base more than 10 times larger than its closest competitor. It includes Internet innovators Amazon.com, ARTUFRAME, Audio Book Clubs, Billboard Talent Net, CDnow, E!Online, iVillage, Musicmaker.com, Let's Eat Out, N2K's Music Boulevard, Planet Direct, Speed Serve, Spinners.com, Soundstone and Ticketmaster Online. Net Perceptions has received financial backing from Hummer Winblad, JAPCO, London Pacific Life and Annuity, Saint Paul Venture Capital Inc., and Paul Allen's investment group, Vulcan Ventures, Inc. Net Perceptions can be reached by calling 1-800-466-0711 or on the World Wide Web at <http://www.netperceptions.com./CONTACT>: Taylor Allis of Alexander Communications, Inc., 303-615-5070, tallis@alexandercom.com, for Net Perceptions; or Net Perceptions Booth # 2705, Internet World Fall '98, Oct. 7-9/ 11:47 EDT

12/3,AB,K/2 (Item 2 from file: 20)

DIALOG(R)File 20:Dialog Global Reporter
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03039153

Net Perceptions Announces Enterprise-Class, Real-Time Recommendation Engine for E-Commerce

PR NEWSWIRE

October 07, 1998

JOURNAL CODE: WPRW LANGUAGE: English RECORD TYPE: FULLTEXT

WORD COUNT: 932

Net Perceptions For E-Commerce 4.0 Features Mission-Critical 24x7 Operations, Plus New Personalization Tools to Increase Cross-Sells, Up-Sells and Repeat Sales NEW YORK, Fall Internet World '98, Oct. 7 /PRNewswire/ -- Today, Net Perceptions, Inc., announces Net Perceptions for E-Commerce 4.0. Based on the latest generation of the world's most widely deployed real-time recommendation engine, CDnow and BrainPlay.com will be among the first companies to deploy the product. "It works like a seasoned sales pro," said Steve Larsen, Net Perceptions' vice president of marketing and business development. "It continually learns more about each customer's individual wants, needs and preferences, and automatically makes personalized, one-to-one recommendations accordingly." "CDnow has been a long-time user of Net Perceptions' personalization products. We believe that our newest personalized pages, My CDnow, with the aid of Net Perceptions' software, is revolutionizing E-Commerce," said Mike Krupit, vice president of CDnow. "The functionality in Net Perceptions for E-Commerce 4.0 will make it even easier for us to develop and deploy this

essential technology on our standard setting site." With a customer base more than 10 times larger than its closest competitor, Net Perceptions is the de facto industry standard for personalized Internet marketing. The company's customers include e-commerce leaders such as Amazon.com, BrainPlay.com, CDnow, Music Boulevard and Ticketmaster Online. For them, Net Perceptions' real-time recommendation technology is seen as an essential strategic tool. "As we approach the important holiday shopping season, it was critical for us to employ personalization technology to help parents and families make informed decisions about gifts for the children in their lives," said Srikant Srinivasan, president and CEO of BrainPlay.com. "Net Perceptions for E-Commerce 4.0 met all of our needs, and will certainly help gift-givers make informed choices that will bring smiles to kids' faces during the holidays." Turn browsers into buyers. The application automatically engages customers in a meaningful dialog, making highly personalized recommendations from the first visit. Increase cross-sell and up-sell. All recommendations are dynamically personalized to each customer's individual wants, needs and preferences. Build customer loyalty. The ever-increasing personalization of the recommendations deepens each customer's relationship with every transaction. "Today, no Internet commerce venture can compete without real-time recommendation technology -- and no other real-time recommendation solution can compete with Net Perceptions for E-commerce 4.0," said Steven Snyder, Net Perceptions' president and CEO. "It is our most advanced solution to date, combining enterprise class 24x7 operations, dramatic new performance enhancements and many new recommendation capabilities -- it is a generation beyond any other solution." Net Perceptions for E-Commerce 4.0 provides a new level of application customization, fine-tuning and flexibility, giving every Net Perceptions customer the ability to stand out from the competition by doing business their own special way. The product can be deployed and measurably increase sales within a week, building customer loyalty with every transaction. "Net Perceptions for E-Commerce 4.0 provides a technology framework for the loyalty-building strategies central to ecommerce success. Organic has pushed the personalization envelope and coaches our Fortune 1000 clients on the ROI of personalization," said Gregory Wester, corporate director of specialized practices at Organic. Key Features in Net Perceptions for E-Commerce version 4.0: Enterprise-class 24x7 operations: Dramatic new performance levels and mission-critical reliability with no need to shut down for routine maintenance. Support for commercial enterprise databases: native for Oracle, Sybase and SQL server; ODBC for others. Rapid deployment and fast ROI: Net Perceptions' APIs are so streamlined that the application can be deployed and measurably increase sales and profits in well under a week. Serendipity control: Allows for highly precise recommendations that account for regional preferences, seasonal popularity and other environmental factors. New algorithm platform. Every Net Perceptions customer now has the ability to stand out from other Internet marketers. New features provide a level of application customization, fine-tuning and flexibility. Easy integration with major platforms. Net Perceptions for E-commerce 4.0 can be deployed from within the platform framework of the most important site building platforms: Broadvision One-to-One, Cold Fusion, IBM NET.Commerce, Microsoft Site Server 3.0 Commerce Edition and Vignette Story Server. Internet World Fall Located at Internet World Fall's Booth #2705, Net Perceptions will preview Net Perceptions for E-Commerce 4.0 for press and trade show audiences. Net Perceptions will also be showcasing customer implementations including BrainPlay.com's new recommendation center. Net Perceptions for E-Commerce 4.0 will be available November 30. About Net Perceptions Incorporated in

1996, Net Perceptions, Inc. is the world's preeminent developer and leading supplier of real-time recommendation solutions. It is the originator of online **collaborative filtering** technology, the most accurate predictor of individual behavior available. Also the originator of the Realtime Recommendation Platform, which integrates **collaborative filtering**, neural network, fuzzy logic and genetic algorithm technologies, and automatically applies the optimum technology to whatever recommendation or personalization task is at hand. Net Perceptions' founders include the original team of University of Minnesota researchers who pioneered the concepts and applications of **collaborative filtering** and lead programmers from supercomputer maker Cray Research. Net Perceptions has a customer base more than 10 times larger than its closest competitor. It includes Internet innovators: Amazon.com, ARTUFRAME, Audio Book Clubs, Billboard Talent Net, CDnow, E!Online, iVillage, Musicmaker.com, Lets Eat Out, N2K, Planet Direct, Speed Serve, Spinners.com, Soundstone and Ticketmaster. Net Perceptions has received financial backing from Hummer Winblad, JAFCO, London Pacific Life and Annuity, St. Paul Venture Capital Inc., and Paul Allen's investment group, Vulcan Ventures, Inc. Net Perceptions can be reached by calling 1-800-466-0711 or on the World Wide Web at <http://www.netperceptions.com>. /CONTACT: Taylor Allis of Alexander Communications, Inc., 303-615-5070, tallis@alexandercom.com, for Net Perceptions, Inc.; or Net Perceptions, Booth # 2705, Internet World Fall '98, Oct. 7-9/ 11:44 EDT

19/3,AB,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00087905 79-02795
Disaggregated Probabilistic Accounting Information: The Effect of Sequential Events on Expected Value Maximization Decisions
Hirsch, Maurice L., Jr.
Journal of Accounting Research v16n2 PP: 254-269 Autumn 1978 ISSN: 0021-8456 JRNL CODE: JAR
ABSTRACT: In a 2-act decision where each act had 2 events occurring in sequence, Ronen (1971) found that when the joint **probabilities** of succes of the 2 acts were equal (i.e., overall expected **values** of the alternatives were equal), subjects preferred the act where the **probability** of success associated with the first event was higher. An experiment was undertaken which deals with the issue of whether the sequence effect, associated with the provision of **probabilistic** information and identified by Ronen, exists in a more pragmatic and material setting. The design variables were presented both as a chance task and as a business case task. An internal-external locus of control or **personality** variable was incorporated as a possible **predictor** of decision-making behavior. The 2 tasks were perceived by the subjects as being different, and within the business case, there seemed to be a reinforcement of the notion of subjective **probability** revisions.

19/3,AB,K/2 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2004 ProQuest Info&Learning. All rts. reserv.
00113110 80-06998
Renewing the Hunt for the Heffalump: Identifying Potential Entrepreneurs by Personality Characteristics
Hull, David L.; Bosley, John J.; Udell, Gerald G.
Journal of Small Business Management v18n1 PP: 11-18 Jan 1980 ISSN:

0047-2778 JRNL CODE: JSB

ABSTRACT: The search for a way to identify potential entrepreneurs, or individuals willing to assume the risks of organizing and managing businesses in return for a profit, has been undertaken by a National Science Foundation study at the University of Oregon. Many parameters of entrepreneurship were studied and measured by using hypothesized factors and variables cited in previous studies, such as the need for achievement and locus of control. Seven scales were developed regarding **personality** inventory: 1. interest in money and fame, 2. tendency to give socially desirable responses, 3. entrepreneurship, 4. internal locus of control, 5. **likelihood** to take risk, 6. creativity, and 7. the need to achieve. These scales were used to test 41 items on a **personality** inventory administered to 307 respondents, in order to gauge their **likelihood** to start a business. Function task **preferences** and **personality** constructs were found to be most important in identifying entrepreneurs. The Need for Achievement and Internal Locus of Control Scales were not found to be significant in this study as they had been in past studies to identify entrepreneurs. The risk and creativity scales were better indicators of individuals most likely to start their own businesses.

19/3,AB,K/7 (Item 7 from file: 13)

DIALOG(R) File 13:BAMP

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1112885 Supplier Number: 01841199

International Market Segmentation Based on Consumer-Product Relations

(Product marketers are challenged by global integration to handle international segmentation, and the paper proposes a methodology using means-end chains, which states that product attributes are means to the desired ends for consumers, that is, values)

Article Author(s): Ter Hofstede, Frenkel; Steenkamp, Jan-Benedict E M; Wedel, Michel

Journal of Marketing Research, v 36, n 1, p 1-17
February 1999

DOCUMENT TYPE: Journal ISSN: 0022-2437 (United States)

LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT:

An integrated methodology used in identifying segments in international markets based on consumer means-end chains (MECs) is presented in the paper. According to MEC theory, product **attributes** are used by consumers to obtain desired results such as **values** through the benefits yielded by the **attributes**. MEC offers a way by which consumers and product could be linked in an international context. The paper developed a model that is capable of identifying the relationships between the consumer and the product at the segment level. The model takes into consideration the different response tendencies, within and among countries. The model was developed to allow it to be applied to different types of international market selection and differentiation strategies. One, specific products could be introduced to specific segments. Two, a single segment could be targeted by a bundle of products. Three, the same product could be developed for multiple segments. The model was tested in a Monte Carlo case study, which revealed that the model works well even when subjected to a diverse set of conditions. It was also used in examining the consumer data on yogurt from European countries, wherein four international segments were identified. It was further revealed that the segments were related to consumer sociodemographics, consumption patterns, media consumption, and **personality**. Article includes a figure illustrating the **probabilistic**

means-end map segment.

19/3,AB,K/8 (Item 8 from file: 15)

DIALOG(R)File 15:ABI/Inform(R)

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01798932 04-49923

The role of direction of comparison, attribute-based processing, and attitude-based processing in consumer preference

Mantel, Susan Powell; Kardes, Frank R

Journal of Consumer Research v25n4 PP: 335-352 Mar 1999 ISSN: 0093-5301

JRNL CODE: JCR

ABSTRACT: Preference formation involves comparing brands on specific **attributes** (attribute-based processing) or in terms of overall evaluations (attitude-based processing). When consumers engage in an **attribute**-based comparison process, the unique **attributes** of the focal subject brand are weighted heavily, whereas the unique attributes of the less focal referent brand are neglected. This direction of comparison effect is reduced when consumers engage in attitude-based processing or when high involvement increases motivation to process accessible attributes more thoroughly and systematically. The present research investigates a **personality** variable, need for cognition, that increases the likelihood of **attribute**-based versus attitude-based processing and therefore, also affects the magnitude of the direction-of-comparison effect.

paul

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perry

Resources on Collaborative Filtering

Press

The Science of the Sleeper How the Information Age could blow away the blockbuster. Malcolm Gladwell on Collaborative Filtering.

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29. Ungar, L. and D.P. Foster (1998). A formal statistical approach to collaborative filtering. Conference on Automated Learning and Discovery (CONALD).
30. Latent Class Models for Collaborative Filtering Thomas Hofmann and Jan Puzicha Proceedings of the International Joint Conference in Artificial Intelligence, 1999
31. Social Information Filtering: Algorithms for Automating "Word of Mouth" Upendra Shardanand and Pattie Maes, CHI '95.
32. Yezdi Lashkari Feature-Guided Automated Collaborative Filtering

Minor pubs:

- Rating and filtering of scientific, technical and other network documents
- Rating web pages

Mail Lists:

- Berkeley

Conferences and Workshops:

- Berkeley Workshop on Collaborative Filtering, March 16, 1996
- Report on the Berkeley '96 Conference
- FIFTH DELOS WORKSHOP Filtering and Collaborative Filtering Budapest, 10-12 November 1997
- Notes on the above conference: DELOS '97
- Fourth International Conference on AUTONOMOUS AGENTS (Agents 2000) Barcelona, Catalonia, Spain. (mirrored here AI for Electronic Commerce, AAAI-99 Workshop

Other summary pages:

- Google search
- Microsoft Research
- ACM
- NRC/IIT
- bnc's collaborative filtering resources
- MultiAgent Sytems on Recommender Systems-Collaborative Filtering
- The Next Generation of Internet Search engines
- Agustin Schapira's Resources on Collaborative Filtering
- MIT Media Lab Agents Group Resources
- Chislenko self serving search
- Yahoo Intelligent Software Agents page
- and Yahoo Intelligent Agents page

Data Sets:

- EachMovie Data

Systems:

- WebBIRD: BIRD is a bibliometric query by example search engine. Given a set of pages of interest to the user, it retrieves a set of similar documents by following citation paths that pass through those given documents.
- GroupLens
- GroupLens Browser Watcher
- movielens: movie recommendation system from the grouplens team featuring 1800 movies and 50000 users.
- firefly: company providing collaborative filtering technology in a variety of different domains.
- gustos starrater: java applet for web page recommendations.
- jester: collaborative filtering system for jokes.
- moviecritic: movie recommendation system from likeminds.
- cinemax movie matchmaker: cinemax's movie recommendation system from likeminds featuring films from the past 10-15 years.
- my launch: collaborative filtering system for music.
- amazon.com: recommendations on books and music.
- TV Recommender
- Firefly Networks's
- Suggest 1.0

Academic Departments and research centers:

- Cooperative Systems Engineering Group, Computing Department, Lancaster University, Lancaster UK
- MIT Media Lab Software Agents Group
- IBM Institute for Advanced Commerce

Patents:

- John B. Hey (Patent numbers 4870579 and 4996642).

People:

- Marko Balabanovic
- Jack Breese, Microsoft Research
- Peter Brusilovsky, CMU
- Alexander (Sasha) Chislenko
- Ken Goldberg, U.C. Berkeley
- Thomas Hofmann, Brown University
- Joaquin A. Delgado
- David Heckerman, Microsoft Research
- Eric Horvitz
- Jon Herlocker, Oregon State.
- Carl Kadie, Microsoft Research
- Paul Maglio
- David A. Maltz, CMU
- Paul Resnick, UMich
- John Riedl GroupLens, NetPerceptions, U Minnesota
- Badrul Munir Sarwar, U. Minnesota.
- Don Turnbull, U Toronto
- MIT Media Lab: Software Agents Group people
- George Karypis

Companies:

- Preference Metrics
- Rating Zone
- Net Perceptions
- Triple Hop

- SeraphimTech
- IXMatch
- Yo.com
- Outride Inc
- FastFocus Inc.
- Reactive Research

Related Companies:

- Saffron Tech
- OpinionLab

Defunct companies:

- Firefly Network - movies, books, music, etc.
- WiseWire - news recommendations
- Open Sesame -
- LikeMinds - movies
- FizzyLabs - similarity engine for documents

Empirical Analysis of Predictive Algorithms for Collaborative Filtering

Jack Breese
David Heckerman
Carl Kadie

Microsoft Research
Redmond 98052-6399, WA

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Abstract:

Collaborative filtering or recommender systems use a database about user preferences to predict additional topics or products a new user might like. In this paper we describe several algorithms designed for this task, including techniques based on correlation coefficients, vector-based similarity calculations, and statistical Bayesian methods. We compare the predictive accuracy of the various methods in a set of representative problem domains. We use two basic classes of evaluation metrics. The first characterizes accuracy over a set of individual predictions in terms of average absolute deviation. The second estimates the utility of a ranked list of suggested items. This metric uses an estimate of the probability that a user will see a recommendation in an ordered list. Experiments were run for datasets associated with 3 application areas, 4 experimental protocols, and the 2 evaluation metrics for the various algorithms. Results indicate that for a wide range of conditions, Bayesian networks with decision trees at each node and correlation methods outperform Bayesian-clustering and vector-similarity methods. Between correlation and Bayesian networks, the preferred method depends on the nature of the dataset, nature of the application (ranked versus one-by-one presentation), and the availability of votes with which to make predictions. Other considerations include the size of database, speed of predictions, and learning time.

Appears in Proceedings of the Fourteenth Conference on Uncertainty in Artificial Intelligence, Madison, WI, July, 1998. Morgan Kaufmann Publisher.

([postscript, 397KB](#))

([zipped postscript, 97KB](#))

Automated Collaborative Filtering and Semantic Transports

[Version 0.72 - 15-Oct-97]

© 1997 Alexander Chislenko - sasha1@netcom.com

The essay is also available in [Rich Text format](#) and [MS Word Format](#)

Preamble for draft readers

This essay focuses on the conceptualization of the issues, comparisons of current technological developments to other historical/evolutionary processes, future of automated collaboration and its implications for economic and social development of the world, and suggestions of what we may want to pursue and avoid. Explanations of the workings of the technology and analysis of the current market are not my purpose here, although some explanations and examples may be appropriate. Please send your suggestions to sasha1@netcom.com

You can find an up-to-date version of the essay at <http://www.lucifer.com/~sasha/articles/ACF.html>

Abstract

Automated Collaborative Filtering of information (ACF) is an unprecedented technology for distribution of opinions and ideas in society and facilitating contacts between people with similar interests. It automates and enhances existing mechanisms of knowledge distribution and dramatically increases their speed and efficiency. This allows to optimize knowledge flow in the society and accelerate the evolution of ideas in practically all subject areas. ACF also provides a superior tool for information retrieval systems that facilitates users' navigation in the sea of information in a meaningful and personalized way. This technology can be viewed as a *semantic transport* - a social utility that, after physical and data transports, transfers increasingly abstract and intelligent objects between previously isolated fragments of the social organism. As an artificial system that integrates and processes knowledge of multiple human participants, ACF represents an intermediate stage between human and purely artificial intelligence and lays the foundation for the future knowledge processing industry. This article discusses the premises and the historical analogs of ACF technology and suggests its possible uses as well as long-term economic and social implications.

Premises of Automated Collaborative Filtering

Information flows in the society

Social mechanisms of knowledge distribution represent a formative factor for all spheres of social life. It is the advantages of sharing knowledge among individuals that, together with benefits of group work, led to the development of language, symbolic thinking, and specialization of labor. The rate of social progress is to a large degree determined by the availability of standardized and affordable communication tools. The transaction costs of the social communication infrastructure define the scales and interrelations of social institutions. Effective mechanisms for collecting and publishing aggregate opinions of the population are a crucial factor for democratic governance; similar mechanisms for

establishing balanced product and share prices form a signaling foundation of a market economy.

Collaborative filtering of information

While generalized, or aggregate, information is essential for balancing social processes on the macro-scale, it is usually not sufficient for suggesting optimal behavior to any particular person. For making efficient personal selections, people have to possess both necessary general knowledge and special information relevant to their particular situation. For collecting necessary information, one has to choose what objects to pay attention to. In early human history, each person was familiar with the whole environment and, after gaining experience with most available things and people, could decide what to explore further. However, this strategy cannot work in a more complex society, when one is faced with more objects and people than he can even sample. This situation requires exchange of personal experience among individuals and sharing personal advice on many particular issues. If a person needs to make a decision in an unknown situation, he can talk to his friends, and follow their suggestions. Here, one's circle of acquaintances effectively plays the role of an information filter, suggesting most relevant options and leads for further exploration.

With increasing variety of areas of expertise and value judgments, the opinions of a few chosen individuals and the averaged opinion of the society become insufficient for providing advice for all of one's decisions. In this situation, larger-scale collaboration in information filtering becomes increasingly important. Individuals seeking advice query people with similar interests whom they trust, collect their opinions and choose the options selected by the majority of the most knowledgeable people. This is very often the way we select places for vacation, books, movies, or restaurants. If none of the people we ask have any experience with a specific item, some of them may still know something about it, if they have heard about it from others. If someone cannot recommend an item of interest, they may still be able to refer us to another person who we may ask about it. This is the "word of mouth" method of information distribution in a society.

Active Collaborative Filtering

Querying people is a useful method for finding information when you know you need it, or when you think something new might have appeared. This method may be called "user pull", as you have to expend an effort to pull the knowledge out of the passive environment. However, it is not always sufficient, especially in cases when you do not know what questions to ask, or something totally new has happened, or your contacts find out something they couldn't have told you about before.

Active collaborative filtering helps you in such cases, by bringing you information you need when someone in your community discovers it. Information can "find" you in two ways. First, you can ask people to let you know whenever they learn something exciting, new, or relevant in some area. Second, people who know you can share information if they decide you can benefit from it. In both cases, after learning about your needs or preferences, members of the community take an active role in supplying you with important knowledge. We can say that the community actively "pushes" the information towards you.

Limitations of existing filtering methods

Traditional methods of knowledge distribution become very inefficient when the size and complexity of a society far outpace the ability of anyone's circle of acquaintances to monitor events. The modern communication system transmits billions of messages daily, and many of them may be of great interest to you. You can also easily access any of the millions of available books, magazines, songs, movies or

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200455

File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)

Set	Items	Description
S1	254	COLLABORATIVE()FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR METHOD? ?)
S2	2040752	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ? OR TRAIT? ? OR CHARACTERISTIC? ?
S3	45182	PROBAB? OR LIKELIHOOD
S4	1239	PERSONALITY OR PERSONALITIES
S5	0	S1(S)S4
S6	188850	PERSONAL
S7	57207	AUTOMATED
S8	735078	COMPUTER?
S9	97619	INTERNET
S10	682570	COLLABORAT? OR FILTER??? OR RECOMMEND?
S11	605460	IC=(G09B-019 OR G01D-001 OR G06F-017 OR G07G-001 OR G06F-0- 07 OR G06F-015)
S12	1	S1 AND S4
S13	435	S6()S2
S14	2	(S1 AND S13) NOT S12
S15	9	S2 AND S3 AND S4
S16	2	S11 AND S15
S17	2	S16 NOT (S12 OR S14) [duplicates]
S18	262	(S4 AND S11) NOT (S12 OR S14 OR S16)
S19	8	S18 AND S10
S20	142	S18 AND S7:S9
S21	0	S19 NOT (S12 OR S14 OR S16 OR S18)
S22	7	S15 NOT (S12 OR S14 OR S16 OR S18)

12/34/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014570034 **Image available**

WPI Acc No: 2002-390737/200242

Complex filtering device and method for database marketing in electronic commercial transaction

Patent Assignee: EPION CO LTD (EPIO-N); KIM B D (KIMB-I)

Inventor: KIM B D

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
KR 2001111913	A	20011220	KR 200032690	A	20000614	200242 B

Priority Applications (No Type Date): KR 200032690 A 20000614

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
KR 2001111913	A	1	G06F-017/60	

Abstract (Basic): KR 2001111913 A

NOVELTY - A complex filtering device and a method for database marketing in electronic commercial transaction are provided to recommend items for customers by accumulating and analyzing various individual information(age, sex, hobby, **personality** and so on) and past purchase information generated on web.

DETAILED DESCRIPTION - A complex filtering device for database marketing in electronic commercial transaction consists of a HTML(hypertext markup language)(10), a merchant server(12), a front module(14), a database(16), a hybrid filtering(22), a connection

manager(24), a client(26), a contents producer(28) and a mail agent(30). The HTML(10) displays item box(goods and service information) of web site selected by the customer. If the customer clicks the item box, the merchant server(12) displays goods and service information to the customer in detail, or provides recommended item to the customer. The front module(14) collects data for recommend items fit to taste of the customer among items provided by the merchant server(12). The database(16) accumulates and analyzes data collected by the front module(14), and processes data as database fitting preference of the customer. The hybrid filtering(22) applies **collaborative filtering** (18) and content-based filtering(20) algorithm to data outputted from the front module(14) and the database(16), and provides items according to preference of each customer. The connection manager(24) manages operation state of the hybrid filtering(22). The connection manager(24) manages the client(26).

pp; 1 DwgNo 1/10

Derwent Class: T01

International Patent Class (Main): G06F-017/60

14/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015418143 **Image available**

WPI Acc No: 2003-480283/200345

Recommendation system e.g. cable television system selects recommended media presentation event based on instantaneous recommendation value for each event, on request

Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG)

Inventor: KURAPATI K; SCHAFFER J D; TROVATO K I

Number of Countries: 028 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030061183	A1	20030327	US 2001963245	A	20010926	200345 B
WO 200328368	A1	20030403	WO 2002IB3696	A	20020910	200345
EP 1433312	A1	20040630	EP 2002762713	A	20020910	200443
			WO 2002IB3696	A	20020910	

Priority Applications (No Type Date): US 2001963245 A 20010926

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 20030061183	A1		25	G06F-015/18	
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WO 200328368	A1 E			H04N-005/445	
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Designated States (National): CN JP KR

Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
IE IT LU MC NL PT SE SK TR

EP 1433312	A1 E			H04N-005/445	Based on patent WO 200328368
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Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
IE IT LI LU MC NL PT SE SK TR

Abstract (Basic): US 20030061183 A1

NOVELTY - The recommendation function for each media presentation events is calculated and weighted, using fuzzy-now function corresponding to the recommendation value for each events at specific time on specific channel. A selector selects recommended event based on instantaneous recommendation value, on request.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for **recommendation method**.

USE - E.g. cable television (CATV) system, broadcast television

system.

ADVANTAGE - Since the personal schedule of the user is incorporated into recommendation procedure, the **personal preferences** of user is reflected accurately.

DESCRIPTION OF DRAWING(S) - The figure shows a block diagram of the relevant functional modules in three-way **recommendation system**.

pp; 25 DwgNo 9/12

Derwent Class: T01; W03

International Patent Class (Main): G06F-015/18; H04N-005/445

14/7/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014816262 **Image available**

WPI Acc No: 2002-636968/200268

System for automatically recommending broadcasting program uses point classification based on predetermined grade and stores user preferences in database

Patent Assignee: GENTOR.COM INC (GENT-N); GENTOR.COM (GENT-N)

Inventor: HWANG J; HWANG Y H

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200273500	A1	20020919	WO 2002KR440	A	20020314	200268 B
KR 2002073050	A	20020919	KR 200113207	A	20010314	200311
AU 2002241360	A1	20020924	AU 2002241360	A	20020314	200433

Priority Applications (No Type Date): KR 200113207 A 20010314

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200273500 A1 E 17 G06F-019/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

KR 2002073050 A G06F-019/00

AU 2002241360 A1 G06F-019/00 Based on patent WO 200273500

Abstract (Basic): WO 200273500 A1

NOVELTY - System for automatically recommending a broadcasting program comprises a recommending server classifying the program recommending information received in advance in response to a request for a recommendation from the user and providing an estimated result by adding weight. User **personal preference** information is stored in a database along with the recommending information. The server comprises a recommending information module storing the user inquiry - reservation - vote information, the user being connected to a website operated by the server, a classifier model for the program information and a recommending module providing a result of point classification based on a predetermined grade.

DETAILED DESCRIPTION - There is an INDEPENDENT CLAIM for a program for automatically recommending a broadcasting program.

USE - System is for automatically recommending a broadcasting program by analysis of viewer preferences.

DESCRIPTION OF DRAWING(S) - The figure shows an automatic broadcast

program recommendation method .
pp; 17 DwgNo 2/6
Derwent Class: T01; W02
International Patent Class (Main): G06F-019/00

22/TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.
Computer user interface for use with hand held devices, has Bayesian
agent network model to which data about desired emotion and personality
states to be conveyed by agent is dictated by policy module

22/TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.
Use of new and known Ih channel modulators for treating psychiatric disorders

22/TI/7 (Item 1 from file: 347)
DIALOG(R)File 347:(c) 2004 JPO & JAPIO. All rts. reserv.
GROWTH VIDEO GAME DEVICE, CHARACTER GROWTH CONTROL METHOD, AND READABLE
STORAGE MEDIUM RECORDING CHARACTER GROWTH CONTROL PROGRAM

File 348:EUROPEAN PATENTS 1978-2004/Aug W04

File 349:PCT FULLTEXT 1979-2002/UB=20040826,UT=20040819

Set	Items	Description
S1	488	COLLABORATIVE()FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR METHOD? ?)
S2	1048510	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ? OR TRAIT? ? OR CHARACTERISTIC? ?
S3	161982	PROBAB? OR LIKELIHOOD
S4	2983	PERSONALITY OR PERSONALITIES
S5	5	S1(S)S4
S6	113399	PERSONAL
S7	90298	AUTOMATED
S8	318911	COMPUTER?
S9	79679	INTERNET
S10	443343	COLLABORAT? OR FILTER??? OR RECOMMEND?
S11	65763	IC=(G09B-019 OR G01D-001 OR G06F-017 OR G07G-001 OR G06F-0- 07 OR G06F-015)
S12	11	(S6()S2 OR S4) (S) S1
S13	6	S11 AND S12
S14	5	S12 NOT S13
S15	502	S4 AND S11
S16	28	S1 AND S15
S17	25	S16 NOT S12
S18	107	S1/TI,AB
S19	2	S17 AND S18
S20	1	(S4/TI,AB AND S17) NOT S19
S21	22	S17 NOT S19:S20

13/3,AB/1

DIALOG(R)File 348:EUROPEAN PATENTS

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01541477

Meta-document management system with user definable personalities

**System zum Verwalten von Meta-Dokumenten mit benutzerdefinierbaren
Persönlichkeiten**

**Systeme de gestion de Meta-documents avec personnalites definissables par
l'utilisateur**

PATENT ASSIGNEE:

Xerox Corporation, (219004), Patent Department, Xerox Square - 20 A, 100
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designated States: all)

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LEGAL REPRESENTATIVE:

Grunecker, Kinkeldey, Stockmair & Schwanhausser Anwaltssozietat (100721)
, Maximilianstrasse 58, 80538 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1284461 A1 030219 (Basic)

APPLICATION (CC, No, Date): EP 2002018111 020813;

PRIORITY (CC, No, Date): US 311857 P 010813; US 683236 011205

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: G06F-017/30

ABSTRACT EP 1284461 A1

A system operates using meta-documents which include document content associated with one or more **personalities**. Each **personality** is associated with a set of document service requests. Users are provided different techniques for creating personalities and modifying existing personalities. These techniques include: the use of an algebra to tailor existing personalities, the use of a list of links or documents to create a personality, the use of predefined personalities and knowledge levels in a field to create new personalities, the use of question answering techniques, and the use of learning personalities. Specified personalities are then used to enrich document content by integrating into corresponding meta-documents the results received from their document service requests.

ABSTRACT WORD COUNT: 113

NOTE: Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200308	948
SPEC A	(English)	200308	40481
Total word count - document A			41429
Total word count - document B			0
Total word count - documents A + B			41429

13/3,AB/2

DIALOG(R)File 349:PCT FULLTEXT

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00900313

INTELLIGENT PERFORMANCE-BASED PRODUCT RECOMMENDATION SYSTEM

SYSTEME DE RECOMMANDATION DE PRODUIT BASE SUR UNE PERFORMANCE INTELLIGENTE

Patent Applicant/Assignee:

JOHNSON & JOHNSON CONSUMER COMPANIES INC, 199 Grandview Road, Skillman,
NJ 08558, US, US (Residence), US (Nationality)

Inventor(s):

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BLOOM Jeffrey Adam, 12 Krebs Road, Plainsboro, NJ 08536, US,

Legal Representative:

ELDERKIN Dianne B (et al) (agent), Woodcock Washburn LLP, 46th floor, One
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Patent and Priority Information (Country, Number, Date):

Patent: WO 200233628 A2 20020425 (WO 0233628)
Application: WO 2001US32294 20011017 (PCT/WO US0132294)
Priority Application: US 2000241405 20001018

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 23635

13/3,AB/4

DIALOG(R)File 349:PCT FULLTEXT
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00574705

**METHODS AND SYSTEMS FOR PROVIDING PERSONALIZED SERVICES TO USERS IN A
NETWORK ENVIRONMENT
PROCEDES ET SYSTEMES PERMETTANT DE FOURNIR DES SERVICES PERSONNALISES A DES
UTILISATEURS DANS UN ENVIRONNEMENT DE RESEAU INFORMATIQUE**

Patent Applicant/Assignee:

JJ MOUNTAIN INC,
Inventor(s):

CAO Jingjun,
CHU Chien-Yi,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200038078 A1 20000629 (WO 0038078)
Application: WO 99US30580 19991221 (PCT/WO US9930580)
Priority Application: US 98113094 19981221

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK EE ES FI GB GD
GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ
VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM
GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 12534

English Abstract

Methods, systems and software products for providing **personalized** services to users in a computer network environment comprise **collecting user information** through at least one user interface (504), analyzing the collected user information (506), generating at least one rule based on the analysis (508), and providing at least one personalized service to the user based on the generated at least one rule (514). In another exemplary embodiment, the methods, systems and software products also comprise sending the collected user information to a server for analysis (504 and 510), receiving a response from the server based on the server analysis (512), and processing the received response (514). In one embodiment, processing comprises (i) saving the response in a local cache, and (ii) implementing the response.

13/3,AB/5

DIALOG(R)File 349:PCT FULLTEXT
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00554420

**USE OF ELECTRONIC SHOPPING CARTS TO GENERATE PERSONAL RECOMMENDATIONS
UTILISATION DE CARTES D'ACHATS ELECTRONIQUES POUR ELABORER DES
RECOMMANDATIONS PERSONNELLES**

Patent Applicant/Assignee:

AMAZON COM,

Inventor(s):

JACOBI Jennifer A,
BENSON Eric A,
LINDEN Gregory D,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200017793 A1 20000330 (WO 0017793)
Application: WO 99US21108 19990913 (PCT/WO US9921108)
Priority Application: US 98156237 19980918

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY
KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 10798

English Abstract

A **recommendations service** recommends products or other items to individual users based on items that are known to be of interest to the users, such as items that are currently and/or were recently in the user's shopping cart. The user may optionally create multiple shopping carts, and view the recommendations associated with a particular shopping cart. The service generates the recommendations using a table (60) which maps items (62) to lists (64) of "similar" items. The similarities reflected by the table (60) are preferably based on the collective interests of the community of users. To generate personal recommendations, the service retrieves from the table (60) the similar items lists (64) corresponding to the items known to be of interest to the user. These similar items lists (64) are appropriately combined into a single list, which is then sorted and filtered to generate a list of recommended items.

13/3,AB/6

DIALOG(R)File 349:PCT FULLTEXT

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00554419

COLLABORATIVE RECOMMENDATIONS USING ITEM-TO-ITEM SIMILARITY MAPPINGS
RECOMMANDATIONS COMMUNES A L'AIDE DE TABLES DE CORRESPONDANCE DE SIMILARITE

ARTICLE A ARTICLE

Patent Applicant/Assignee:

AMAZON COM,

Inventor(s):

LINDEN Gregory D,
JACOBI Jennifer A,
BENSON Eric A,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200017792 A1 20000330 (WO 0017792)
Application: WO 99US20974 19990910 (PCT/WO US9920974)
Priority Application: US 98157198 19980918

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM

Serial 10/686198

September 1, 2004

EE EE ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL
TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY
KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 10860

English Abstract

A **recommendations service** recommends items to individual users based on a set of items that are known to be of interest to the user, such as a set of items previously purchased by the user. The service is used to recommend products to users of a merchant's Web site (30). The service generates the recommendations using a previously-generated table (60) which maps items (62) to lists (64) of "similar" items. The similarities reflected by the table (60) are **based on the collective interests of the community of users**. To generate personal recommendations, the service retrieves from the table (60) the similar items lists (64) corresponding to the items known to be of interest to the user. These similar items lists (64) are appropriately combined into a single list, which is then sorted and filtered to generate a list of recommended items. Also disclosed are various methods for using the current and/or past contents of a user's electronic shopping cart to generate recommendations.

14/6/1 (Item 1 from file: 348)

01598460

Expert system assisting agent and customer in determining an optimum network solution

14/6/2 (Item 2 from file: 348)

01598459

Internet access guidance engine with expert system

14/6/4 (Item 2 from file: 349)

00942519

METHOD AND SYSTEM FOR DISTRIBUTING CONTENT OVER A WIRELESS COMMUNICATIONS SYSTEM

14/3,AB,K/3 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01060430

IMPROVED PROGRAMME SELECTION**SELECTION DE PROGRAMME AMELIORE**

Patent Applicant/Assignee:

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200390466 A2-A3 20031030 (WO 0390466)

Application: WO 2003GB1604 20030415 (PCT/WO GB0301604)
Priority Application: GB 20028607 20020415
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG
SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE
SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 9036
English Abstract

A system for recommending television programmes has a programme classifier deriving membership functions indicating the degree of membership each programme has of the classes for each programme attribute; a viewer profiler monitoring which programmes are watched by the individual viewer and learning through a Bayesian network a preference profile for the individual as a function of those classes; and a programme recommender serving to recommend to the viewer those available programmes whose membership functions most closely match the preference profile.

Fulltext Availability: Detailed Description
Detailed Description

... highly individualistic, evidencing subtleties that cannot (or can only with great difficulty) be distinguished through **collaborative filtering**. It would also be preferable to have a system that placed less rather than more reliance upon the direct intervention of viewers to establish 0 **personal preferences**.
It is therefore an object of one aspect of the present invention to provide an...

14/3,AB,K/5 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00496080
SYSTEM AND METHOD FOR INTEGRATING HETEROGENEOUS INFORMATION
SYSTEME ET PROCEDE D'INTEGRATION DE DONNEES HETEROGENES

Patent Applicant/Assignee:

IBRAIN SOFTWARE INC,
Inventor(s):

SIKKA Vishal,
SIKKA Digvijay,
SOARES Thomas,
PATEL Sukesh,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9927432 A2 19990603
Application: WO 98US24711 19981120 (PCT/WO US9824711)
Priority Application: US 9766742 19971121

Designated States:
(Protection type is "patent" unless otherwise stated - for applications

Serial 10/686198

September 1, 2004

prior to 2004)

JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 7253

English Abstract

A computer-implemented method for querying multiple different types of information, each type of information having a different evaluator, includes receiving a query (102) comprising an identification of at least two evaluators, at least one relationship between the evaluators, and a method of combining results from the evaluators; parsing (104) the query to create (108) an evaluation sequence comprising an ordered sequence of invocations of the evaluators; invoking (110) the evaluators in the evaluation sequence; and combining (112) results from the evaluators according to the method of combining results from the evaluators specified in the query.

Fulltext Availability: Detailed Description

Detailed Description

... or ratings are examples of qualitative information. Techniques for evaluating such information are based on **collaborative filtering**, qualitative data analysis, at the like.

Quantitative information is evaluated based on precise analytical and...

19/3,AB/1 (Item 1 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00859463

DISTRIBUTED MONITORING SYSTEM PROVIDING KNOWLEDGE SERVICES**SYSTEME DE CONTROLE DISTRIBUE FOURNISSANT DES SERVICES DE CONNAISSANCE**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200193096 A2-A3 20011206 (WO 0193096)

Application: WO 2001IB1237 20010530 (PCT/WO IB0101237)

Priority Application: US 2000208394 20000530; US 2000228519 20000828

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 15238

English Abstract

A de-centralized, or distributed, monitoring system provides for data collection across a broad range of remote sources, collecting explicit data (which may be input directly by a user in the form of recommendation, comment, or vote) and/or implicit data (which may be collected by the system according to the user's browsing activity). Data may be monitored locally at the client side, and subsequently transmitted

to a central database. Data may be aggregated at the server, having been collected on the client side from multiple remote sources. During the aggregation process, data collected by the distributed monitoring system are categorized and organized in a central database for convenient retrieval. Implementation of the collected data includes both transmitting explicit data on demand as well as utilizing explicit data, implicit data, or a combination of both explicit and implicit data, in an open **recommendation system** which facilitates customization and personalization of the information retrieval process. A user may be provided with the option of turning off, or "deselecting," the implicit data collection functionality of the system.

19/3,AB/2 (Item 2 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00747117

GIFT ASSORTMENT SELECTION- AND RECOMMENDATION - SYSTEM

SYSTEME DE RECOMMANDATION ET DE SELECTION DE CADEAUX

Patent Applicant/Assignee:

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Legal Representative:

VAN BREDA Jacques, Octrooibureau Los en Stigter B.V., Weteringschans 96,
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Patent and Priority Information (Country, Number, Date):

Patent: WO 200060509 A1 20001012 (WO 0060509)

Application: WO 2000EP2885 20000331 (PCT/WO EP0002885)

Priority Application: NL 1011720 19990401

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 3351

English Abstract

The invention relates to a gift assortment selection system comprising an electronic memory suitable to store and release elements from a gift data file, a display unit and a user's interface for the selection and for showing at least one element from the gift data file on the display unit, wherein the user interface is provided with an input-selection unit for determining at least one giver profile and one receiver profile, and which is provided with a gift criteria file and a decider unit that is equipped, in collaboration with the giver profile and the receiver profile, to select an element from the gift data file.

20/3,AB/1 (Item 1 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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00565054

SYSTEM AND METHOD FOR MATCHING USERS WITH ITEMS IN A NETWORK
SYSTEME ET METHODE PERMETTANT D'ETABLIR DES LIENS DE CORRESPONDANCE ENTRE
DES UTILISATEURS ET DES PRODUITS DANS UN RESEAU

Patent Applicant/Assignee:

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STOICA Andrei,
KIM Stanley Hyungjung,
HUGHES Craig Rungaldier,

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RABINOWITZ Matthew,
DRUZHNIKOV Ilya Abezgauz,
STOICA Andrei,
KIM Stanley Hyungjung,
HUGHES Craig Rungaldier,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200028427 A1 20000518 (WO 0028427)
Application: WO 99US26783 19991110 (PCT/WO US9926783)
Priority Application: US 98107747 19981110

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD
RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF
CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 20049

English Abstract

A system and method of determining and using psychographic information to help better match user's interests with products and services. Psychographic information is information about an individual's **personality**. This information can be associated with an item to indicate what **personality traits** are more common among people who are, or are not, more likely to be interested in that item. The system supports two types of profiles: user profiles (216) and item profiles (214). A user profile (216) contains the psychographic information showing correspondence, or lack thereof, between a user and various **personality traits**. Similarly, an item profile (214) describes the **personality traits** of users who are interested, or are not interested, in that item. These profiles can be associated with confidence levels to show which traits are better known in the profiles.

21/3,AB/2 (Item 2 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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00946933
PROFILE MANAGEMENT SYSTEM
SYSTEME DE GESTION DES PROFILS

Patent Applicant/Assignee:

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Patent Applicant/Inventor:

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GB, GB (Residence), GB (Nationality), (Designated only for: US)
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Legal Representative:

LLOYD Barry George William (agent), BT Group Legal Services, Intellectual
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Patent and Priority Information (Country, Number, Date):

Patent: WO 200280056 A2 20021010 (WO 0280056)
Application: WO 2002GB1421 20020325 (PCT/WO GB0201421)
Priority Application: EP 2001303061 20010330; GB 20018092 20010330; US
200273267 20020213

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5984

21/3,AB/4 (Item 4 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00879881

ELECTRONIC EMPLOYEE SELECTION SYSTEMS AND METHODS**SYSTEMES ET PROCEDES DE SELECTION D'EMPLOYES PAR VOIE ELECTRONIQUE**

Patent Applicant/Assignee:

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Patent Applicant/Inventor:

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(Residence), US (Nationality), (Designated only for: US)
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Serial 10/686198

September 1, 2004

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(Residence), US (Nationality), (Designated only for: US)
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(Residence), US (Nationality), (Designated only for: US)
SMITH John R, 3202 N.E. 1st Place, Hillsboro, OR 97124, US, US
(Residence), US (Nationality), (Designated only for: US)
PAAJANEN George E, 2314 Falcon Drive, West Linn, OR 97068, US, US
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Legal Representative:

MAURER Gregory L (agent), Klarquist, Sparkman, LLP, One World Trade
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Patent and Priority Information (Country, Number, Date):

Patent: WO 200213095 A2 20020214 (WO 0213095)
Application: WO 2001US24323 20010802 (PCT/WO US0124323)
Priority Application: US 2000223289 20000803

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 21886

21/3,AB/5 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00871024

DATA PROCESSING SYSTEM**SYSTEME DE TRAITEMENT DE DONNEES**

Patent Applicant/Assignee:

NEWSYMPHONY TECHNOLOGIES LIMITED, IFSC House, Custom House Quay, Dublin 1
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Patent Applicant/Inventor:

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, IE, IE (Residence), IE (Nationality), (Designated only for: US)

Legal Representative:

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4, IE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200205115 A2 20020117 (WO 0205115)
Application: WO 2001IE74 20010601 (PCT/WO IE0100074)
Priority Application: IE 2000553 20000707

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

Serial 10/686198

September 1, 2004

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE
 ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
 LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
 TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 13698

21/3,AB/6 (Item 6 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00867316

SYSTEM AND METHOD FOR PROVIDING PERSONALIZED RECOMMENDATIONS**SYSTEME ET PROCEDE DESTINES A FOURNIR DES RECOMMANDATIONS PERSONNALISEES**

Patent Applicant/Assignee:

QUARK INC, 1800 Grant Street, Denver, CO 80203, US, US (Residence), US

(Nationality), (Designated only for: BB BR BZ CA CR CU GD LC MX)

QUARK MEDIA HOUSE SARL, Puets-Godeet 6a, CH-2000 Neuchatel, CH, CH

(Residence), CH (Nationality), (For all designated states except: BB BR

BZ CA CR CU LC MX)

Inventor(s):

GUTIERREZ Francisco, 1800 Grant Street, Denver, CO 80203, US,

Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200201419 A1 20020103 (WO 0201419)

Application: WO 2001US20689 20010627 (PCT/WO US0120689)

Priority Application: US 2000214871 20000628

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE
 ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
 LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
 TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 4581

English Abstract

A system and method of providing **personalized recommendations**. The system defines objects, such as common areas of interests. These objects can be such areas of interest as movies, restaurants, clothes, geography, hobbies, sports, etc. Each object has a set of properties that define the objects. For example, a Movie object may have such properties as genre, director, actors, etc. Each object can then be grouped into a cluster based on commonality of properties of objects that are closely related by different users. For example, if a number of users have similar properties on a particular object, then other objects are examined as to

whether their properties are also similar. An example might be that if a number of users have similar properties on a particular style of music, then their preferences on movies, clothing, hobbies, etc. may also be similar. If these conditions are met, then a "cluster" of those objects and users is formed. Recommendations based on the choices and recommendations from other users within a cluster may then be forwarded to the user.

21/3,AB/7 (Item 7 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00864403

**SYSTEM AND METHOD OF IDENTIFYING OPTIONS FOR EMPLOYMENT TRANSFERS ACROSS
DIFFERENT INDUSTRIES**

**SYSTEME ET PROCEDE D'IDENTIFICATION D'OPTIONS POUR TRANSFERTS D'EMPLOIS
ENTRE INDUSTRIES DIFFERENTES**

Patent Applicant/Inventor:

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MINTZ Steven J, 73 Fox Hedge Road, Saddle River, NJ 07458, US, US
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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200197145 A2 20011220 (WO 0197145)

Application: WO 2001US19352 20010615 (PCT/WO US0119352)

Priority Application: US 2000211823 20000615; US 2000242043 20001020

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14060

21/3,AB/8 (Item 8 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00831820

CUSTOMIZED INTERACTION WITH COMPUTER NETWORK RESOURCES

INTERACTION PERSONNALISEE AVEC DES RESSOURCES D'UN RESEAU INFORMATIQUE

Patent Applicant/Inventor:

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LAST Benjamin James, 5 King Edward Close, Kingsmead, Northwich, Cheshire,
GB, GB (Residence), GB (Nationality), (Designated only for: US)

Legal Representative:

FINDLAY Alice Rosemary (agent), McNeight & Lawrence, Regent House, Heaton
Lane, Stockport, Cheshire SK4 1BS, GB,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200165405 A1 20010907 (WO 0165405)
Application: WO 2001GB877 20010301 (PCT/WO GB0100877)
Priority Application: GB 20004993 20000301

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ
TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8134

English Abstract

A user describes himself or his interests by selecting at least one of a
predetermined set of profiles, which reflect **human characteristics**. The
selected profile(s) can be used when interacting over a communication
network (e.g. the Internet) (7) to facilitate being directed to
appropriate remote information or to appropriate other users. Information
about the activities of many users, such as information about Internet
usage, can be gathered by a central server (19) and collated to compile
statistical information in relation to their respective selected
profile(s).

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200455

File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)

Set	Items	Description
S1	256	COLLABORATIVE() FILTER??? OR (RECOMMENDER OR RECOMMENDATION-) (SYSTEM? ? OR TECHNIQUE? ? OR ALGORITHM? ? OR METHOD?)
S2	1401874	ATTRIBUTE OR ATTRIBUTES OR PREFERENCE? ? OR VALUE OR VALUES OR RATING? ?
S3	41674	PROBABILIT? OR PROBABILISTIC? OR LIKELIHOOD
S4	1158	PERSONALITY
S5	11077	BROWSER? ?
S6	7865	IC=G09B-019
S7	0	S1 AND S2 AND S3 AND S6
S8	6	S1 AND S2 AND S3
S9	0	S1 AND S6
S10	10000	S2 AND S3
S11	0	S S4 AND S10
S12	7	S4 AND S10
S13	7	S12 NOT S8
S14	7	S5 AND S10
S15	7	S14 NOT (S8 OR S12)
S16	0	S1 AND S3 AND S4
S17	13	S1 AND S3
S18	7	S17 NOT (S8 OR S12 OR S15)
S19	8	S6 AND S10
S20	6	S19 NOT (S8 OR S12 OR S15 OR S17)

8/34/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014716183 **Image available**

WPI Acc No: 2002-536887/200257

Automated collaborative filtering method of user data providing online purchasing recommendation for user, involves recommending particular item based on probability of baskets containing items

Patent Assignee: WIZSOFT LTD (WIZS-N)

Inventor: MEIDAN A; OREN Z; RAVID H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020065797	A1	20020530	US 2000726046	A	20001130	200257 B

Priority Applications (No Type Date): US 2000726046 A 20001130

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20020065797	A1	6	G06F-007/00	

Abstract (Basic): US 20020065797 A1

NOVELTY - The **probability** P(A) of baskets containing an item 'A' out of all the baskets, and the **probability** P(A,B) of the basket containing items 'A' and 'B' out of all the baskets are determined. A rule is established to recommend item 'A' in case of having P(A,B) on P(A) greater than threshold **value**, when the basket contains only item B.

USE - For performing automated **collaborative filtering** of user data for providing online purchasing recommendations to user.

ADVANTAGE - Provides accurate real time purchase, information recommendations and alerts user in a fully automatic way without the need for prior **rating** by the user. Alerts in real time for the purpose of circumventing purchasing mistakes and theft.

DESCRIPTION OF DRAWING(S) - The figure shows the collaborated data filtering system.

pp; 6 DwgNo 1/1

Derwent Class: T01

International Patent Class (Main): G06F-007/00

8/34/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014358579 **Image available**

WPI Acc No: 2002-179280/200223

Intelligent system for recommending media content items based on user preferences e.g. for network-based video recording system, uses expressed preferences as inputs to filters and Bayesian predictive algorithms to rate TV programs

Patent Assignee: TIVO INC (TIVO-N); ALI K (ALIK-I); VAN STAM W (VSTA-I)

Inventor: ALI K; VAN STAM W

Number of Countries: 091 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200147273	A1	20010628	WO 2000US33877	A	20001214	200223 B
AU 200120992	A	20010703	AU 200120992	A	20001214	200223
US 20020199186	A1	20021226	WO 2000US33877	A	20001214	200304
			US 2002168808	A	20020621	

Priority Applications (No Type Date): US 99171829 P 19991221

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200147273 A1 E 44 H04N-007/173

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200120992 A H04N-007/173 Based on patent WO 200147273

US 20020199186 A1 H04N-007/16

Abstract (Basic): WO 200147273 A1

NOVELTY - Network-based video recording system rates television programs according to the likelihood that they will appeal to a user, based on the user's own previous **ratings** of television programming. Individual recording units, clients, are in intermittent communication with a server. A user interface is provided in which the user teaches the system by recording their programming **preferences**.

DETAILED DESCRIPTION - Using an interactive **rating** system that employs a thumbs up and thumbs down metaphor for favorable and unfavorable **ratings**, respectively, individual users may give an overall **rating** to a program, or they may rate individual users may give an overall **rating** to a program, or they may rate individual features of the program: for example, directors, actors, and genres; provided in interactive lists. The users **preferences** are then used as inputs to one or more predictive algorithms.

INDEPENDENT CLAIM is also included for the following:

(a) method of predicting items

USE - For network-based video recording system.

ADVANTAGE - Predictive algorithms are adaptive improving in accuracy as more programs are rated. Predicts **rating** for an item

according to how much it will appeal to a user. Provides multiple prediction engines that are capable of providing the most accurate prediction for any particular item. Provide a convenient user interface for teaching the system the user's **preferences**. Has adaptive capability, so that it can learn and adapt to shifts in user **preferences**. The distributed **collaborative filtering** engine guarantees a user's privacy by eliminating the necessity of correlating the user to other user's or groups of users. Calculates similarity between items, rather than between users and to perform such calculation on the client side, eliminating the necessity of a stateful connection between the server and the client. Provide an adaptive modelling prediction engine that accepted both explicit user **ratings** and had the capability of inferring user **ratings** in the absence of explicit **ratings**. Displays the output of the various prediction engines in a single, integrated list.

DESCRIPTION OF DRAWING(S) - The diagram shows the functional architecture of a network based system for predicting the **likelihood** that a an item of media content will appeal to a user based on previous **ratings** of content items by the user

compute correlation (19)
rated items (15)
collaborative engine (17)
pp; 44 DwgNo 1/10

Derwent Class: T01; W04

International Patent Class (Main): H04N-007/16; H04N-007/173

International Patent Class (Additional): G06F-015/16; H04N-007/10;
H04N-007/25

8/34/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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013873330 **Image available**

WPI Acc No: 2001-357542/200138

Collaborative filtering system

Patent Assignee: XEROX CORP (XERO)

Inventor: DARDENNE M; GLANCE N S

Number of Countries: 026 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1065616	A2	20010103	EP 2000305362	A	20000626	200138 B
US 6321179	B1	20011120	US 99343118	A	19990629	200174

Priority Applications (No Type Date): US 99343118 A 19990629

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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EP 1065616	A2 E	11	G06F-017/60	
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT

LI LT LU LV MC MK NL PT RO SE SI

US 6321179	B1	G06F-015/00
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Abstract (Basic): EP 1065616 A2

NOVELTY - System comprises memory (18) storing a set of correlation coefficients which are measures of similarity in **ratings** between pairs of users in the system who have rated a particular item.

Processor (12) calculates the predicted user **rating** which is the sum of the product **rating** and its correlation coefficient divided by the sum of the correlation coefficients, and calculates the variance of the predicted user **rating**, which in turn is a function of the variance of

the correlation coefficients and the variance of the **ratings** . The processor also ranks and presents items to the user by estimating the distribution of the prediction **rating** from empirically determined usage data using the observed distribution and the **probability** distribution w.r.t. a user set threshold **value** .

USE - System is for predicting a users level of interest in information on the WWW or Internet.

ADVANTAGE - System can accommodate different levels of accuracy for different users to save processing time.

DESCRIPTION OF DRAWING(S) - The figure shows the **collaborative filter** system.

pp; 11 DwgNo 1/2

Derwent Class: T01

International Patent Class (Main): G06F-015/00; G06F-017/60

International Patent Class (Additional): G06F-017/30; H03F-001/26;
H04B-015/00

8/7/6 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

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07739720 **Image available**

CONTENT RECOMMENDATION SYSTEM, **CONTENT RECOMMENDATION DEVICE**, **CONTENT RECOMMENDATION METHOD**, **PROGRAM THEREFOR**, AND **PROGRAM STORAGE MEDIUM THEREFOR**

PUB. NO.: 2003-233622 [JP 2003233622 A]

PUBLISHED: August 22, 2003 (20030822)

INVENTOR(s): NAITO EIICHI

OZAWA JUN

APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD

APPL. NO.: 2002-034940 [JP 200234940]

FILED: February 13, 2002 (20020213)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a means that recommends contents with a light load on arithmetic processing and in accordance with the **probability** of deviation of a user's taste.

SOLUTION: Consideration levels are added to **attributes** of a database and to **attribute values** . The consideration levels are set by stereotype selection and questionnaire input. From **probability** based on the consideration levels, recommended contents are selected. The consideration levels are updated based on a user evaluation of the recommended contents.

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13/34/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014139886 **Image available**

WPI Acc No: 2001-624097/200172

Computer user interface for use with hand held devices, has Bayesian agent network model to which data about desired emotion and personality states to be conveyed by agent is dictated by policy module

Patent Assignee: MICROSOFT CORP (MICT)

Inventor: BALL J E; BREESE J S

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6212502	B1	20010403	US 9847160	A	19980323	200172 B
			US 98109232	A	19980630	

Serial 10/686198

September 1, 2004

Priority Applications (No Type Date): US 9847160 A 19980323; US 98109232 A 19980630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6212502	B1	26	G10L-011/00	Div ex application US 9847160	Div ex patent US 6185534

Abstract (Basic): US 6212502 B1

NOVELTY - Policy module (620) dictates data about desired emotion and **personality** states to be conveyed by agent, to Bayesian agent network model (640) facilitating **probabilistic** inferencing of agent behavior. Model (640) has one layer of multi-state nodes representing emotional and **personality** variables and having inputs coupled to module (620). Another layer of multi-state nodes represents behavioral variables.

DETAILED DESCRIPTION - The agent is capable of conveying emotion and **personality** by exhibiting corresponding behavior to user. The behavior variables comprise at least one of speech **attribute** node, facial expression node and word **attribute** node. An INDEPENDENT CLAIM is also included for user interface operating method.

USE - For use with hand held devices, multiprocessor system, microprocessor-based or programmable consumer electronics, network PC, minicomputer, mainframe computer, in distributed computing environment, for speech recognition.

ADVANTAGE - Integrates information from a variety of observable linguistic and non-linguistic behavior, by using Bayesian network.

DESCRIPTION OF DRAWING(S) - The figure shows the system architecture of user interface.

Policy module (620)

Bayesian agent network model (640)

pp; 26 DwgNo 6/17

Derwent Class: P86; T01; W04

International Patent Class (Main): G10L-011/00

15/34/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015738255 **Image available**

WPI Acc No: 2003-800456/200375

Product predicting method for electronic shopping aid, involves determining greatest likelihood product by evaluating probability distribution of preference node, and expected value of information for unspecified attribute node

Patent Assignee: MICROSOFT CORP (MICT)

Inventor: FAYAD U M; HECKERMAN D E; MEEK C A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6633852	B1	20031014	US 99316704	A	19990521	200375 B

Priority Applications (No Type Date): US 99316704 A 19990521

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6633852	B1	30	G06F-017/60		

Abstract (Basic): US 6633852 B1

NOVELTY - The method involves receiving request containing a **value** of **attribute** nodes to determine an available product of greatest **likelihood**. The product is determined by evaluating **probability**

distributions of **preference** nodes. An expected **value** of information for each of unspecified **attribute** nodes is determined by accessing a belief network and unspecified **attribute** nodes are ranked based on the information.

DETAILED DESCRIPTION - The belief network is received with **attribute** nodes reflecting **attributes** of products and the **preference** nodes reflecting available products. The networks are accessed to determine how much a **value** for the unspecified **attribute** node influences the available products having the greatest **likelihood** of being the desired product.

INDEPENDENT CLAIMS are also included for the following:

- (1) an electronic shopping aid
- (2) a computer readable medium.

USE - Used in electronic shopping aids for predicting desired products.

ADVANTAGE - The method allows a user to help the **browser** to accurately determine the product by specifying a like or dislike for one or more products.

DESCRIPTION OF DRAWING(S) - The drawing shows a flowchart of the steps performed by the **preference** -based **browser**.

pp; 30 DwgNo 14/14

Derwent Class: T01

International Patent Class (Main): G06F-017/60

15/34/3 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014362277 **Image available**

WPI Acc No: 2002-182978/200224

Goods selling promotion system for online shopping using internet, monitors the selection and purchasing conditions to collect individual user information and preference information

Patent Assignee: NEC CORP (NIDE)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002015199	A	20020118	JP 2000198056	A	20000630	200224 B

Priority Applications (No Type Date): JP 2000198056 A 20000630

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2002015199	A	17	G06F-017/60	

Abstract (Basic): JP 2002015199 A

NOVELTY - A server (3) has a processor (31) which produces a homepage indicating selling promotion date. A **browser** (11) in a user terminal (1a) accesses the homepage to select and purchase the goods. A monitor (33) in server, monitors selection and purchasing conditions to collect individual user information and **preference** information.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) Selling promotion method;
- (b) Server

USE - For online shopping using internet.

ADVANTAGE - Purchase **probability** is enhanced and stimulated, by displaying detailed purchase reports and applications.

DESCRIPTION OF DRAWING(S) - The figure shows a functional block diagram of goods selling promotion system. (Drawing includes

non-English language text).

User terminal (1a)

Server (3).

Browser (11)

Processor (31)

Monitor (33)

pp; 17 DwgNo 2/25

Derwent Class: T01

International Patent Class (Main): G06F-017/60

International Patent Class (Additional): G06F-017/30

18/34/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016284091

WPI Acc No: 2004-441986/200442

Option-goods recommending system and method

Patent Assignee: BAOLAI SECURITES CO LTD (BAOL-N)

Inventor: DUAN W; TAO H; YANG D

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
CN 1489096	A	20040414	CN 2002147602	A	20021007	200442 B

Priority Applications (No Type Date): CN 2002147602 A 20021007

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
CN 1489096	A		G06F-017/60	

Abstract (Basic): CN 1489096 A

NOVELTY - The **recommendation system** comprises a network interface, a processor and a choice right dealing platform. The network interface is utilized to receive investment target and opinion of game trend. Based on investment target and opinion of game trend received from network interface, the processor selects multiple candidate choice commodities from the choice right dealing platform. Based on rate of return under fixed **probability** of winning a prize, the candidate choice commodity with highest rate of return selected from the multiple candidate choice commodities is as the recommended choice-rightcommodity under the **probability** of winning a prize.

DwgNo 0/0

Derwent Class: T01

International Patent Class (Main): G06F-017/60

18/34/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015227480 **Image available**

WPI Acc No: 2003-288393/200328

Maximum utility object determination system e.g. books, predicts set of maximal utility objects from sorted set of objects using probabilistic model and known object information of particular entity

Patent Assignee: CHICKERING D M (CHIC-I); HECKERMAN D E (HECK-I);

ROUNTHWAITE R (ROUN-I)

Inventor: CHICKERING D M; HECKERMAN D E; ROUNTHWAITE R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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US 20020184139 A1 20021205 US 2001681742 A 20010530 200328 B
Priority Applications (No Type Date): US 2001681742 A 20010530
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 20020184139 A1 13 G06F-017/60
Abstract (Basic): US 20020184139 A1

NOVELTY - The system predicts a set of maximal utility objects from a sorted set of objects using **probabilistic** model and known object information of the particular entity. The entities associated with each object are examined until the set of maximal utility objects is full and lowest utility object in set of maximal utility objects is greater than the upper bound of utility of next sorted objects in set of objects.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) computer readable medium storing program for dynamically extracting highest **probability** object; and
- (2) method for determining highest **probability** recommendation.

USE - For extracting top recommendations of set of possible object such as particular choices, topics, items, products, books, movies, foodstuff, drinks, etc.

ADVANTAGE - Automatically determines a set of most highly **probabilistic** recommendation without determining **probabilities** for each possible objects for which the recommendation is being made.

DESCRIPTION OF DRAWING(S) - The figure shows an explanatory system diagram showing program modules employed for determining highest **probability** recommendation from local **probabilistic** recommendation system.

pp; 13 DwgNo 2/3

Derwent Class: T01

International Patent Class (Main): G06F-017/60

18/34/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014470905

WPI Acc No: 2002-291608/200233

Adaptive television program recommendation system for recommending television programs to a viewer based on their past viewing history

Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG)

Inventor: SCHAFFER J D

Number of Countries: 028 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200158145	A2	20010809	WO 2001EP816	A	20010125	200233 B
EP 1192802	A2	20020403	EP 2001909693	A	20010125	200233
			WO 2001EP816	A	20010125	
KR 2001105404	A	20011128	KR 2001712654	A	20011004	200233
JP 2004508740	W	20040318	JP 2001557277	A	20010125	200420
			WO 2001EP816	A	20010125	

Priority Applications (No Type Date): US 2000498271 A 200000204

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200158145 A2 E 20 H04N-005/00

Designated States (National): JP KR

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU

MC NL PT SE TR
EP 1192802 A2 E H04N-005/00 Based on patent WO 200158145
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI TR
KR 2001105404 A H04N-005/44
JP 2004508740 W 43 H04N-017/00 Based on patent WO 200158145
Abstract (Basic): WO 200158145 A2
NOVELTY - Uses **probabilistic** calculations e.g. applies Bayesian
classifier theory and a viewer profile to create a **recommendation**.
Modifications to classical Bayesian classifier theory are proposed.
System is realized as computer processor coupled to a display.
USE - For recommending television programs to a viewer based on
their past viewing history.
ADVANTAGE - Improved accuracy of recommendation.
pp; 20 DwgNo 0/5
Derwent Class: W02; W03
International Patent Class (Main): H04N-005/00; H04N-005/44; H04N-017/00
International Patent Class (Additional): H04N-005/445